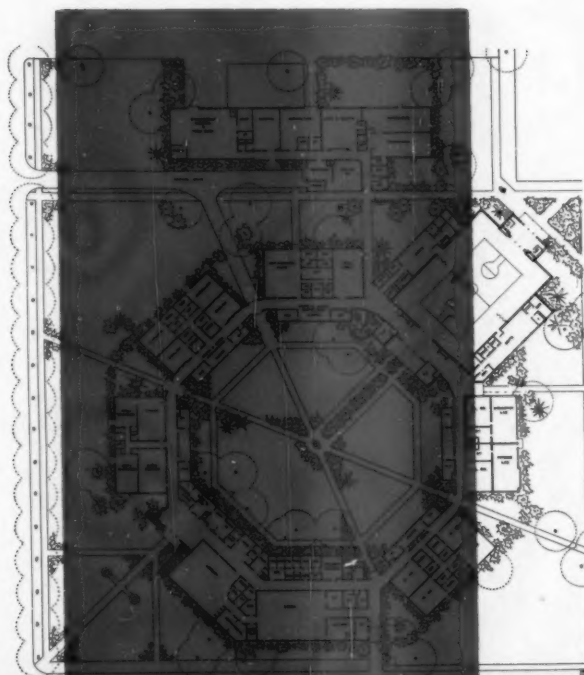


July, 1958

the AMERICAN SCHOOL BOARD JOURNAL

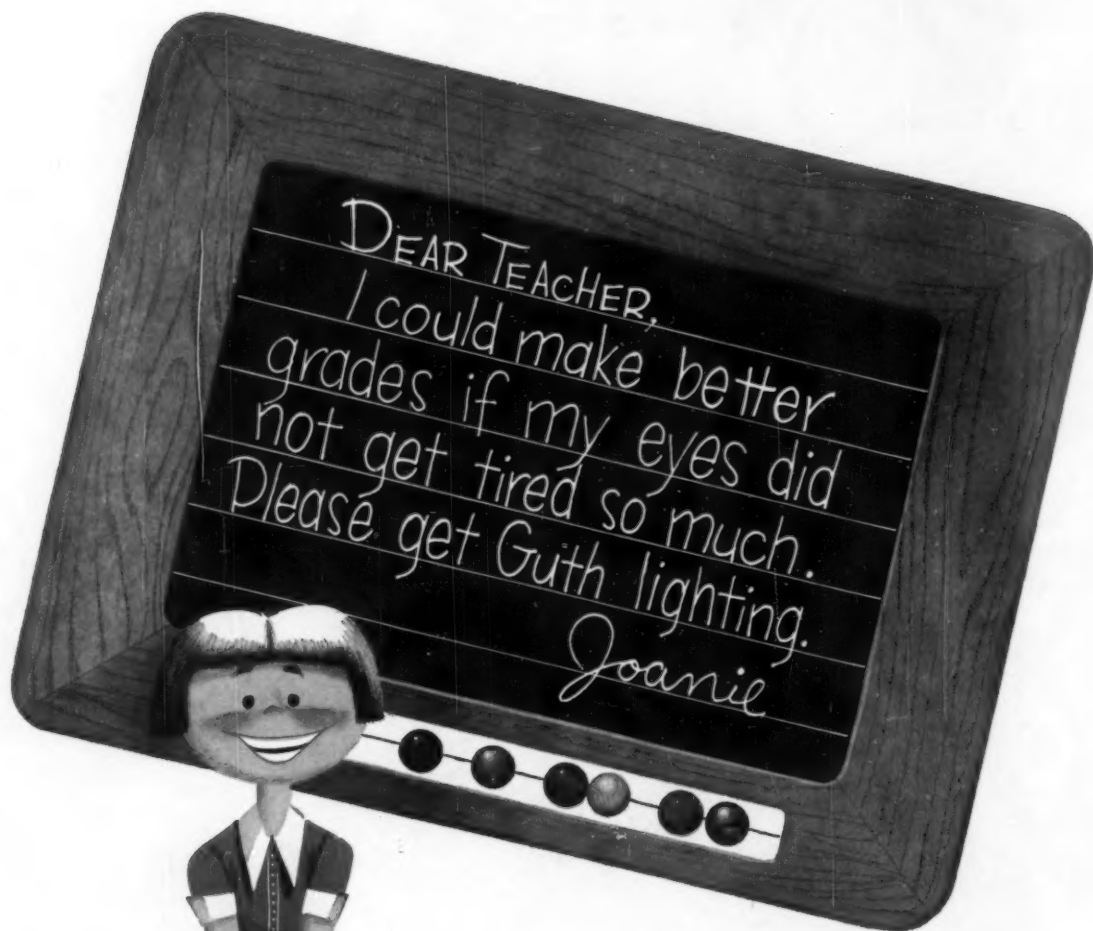
A Periodical of School Administration



The Mt. Pleasant, Mich., High School
A Compact Version of the Campus Plan

(see page 29)





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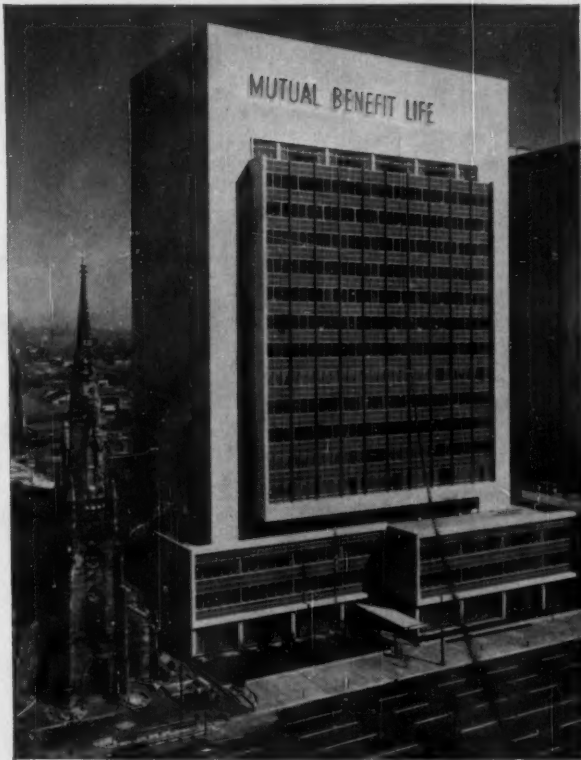
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THE AMERICAN School Board Journal

for July, 1958

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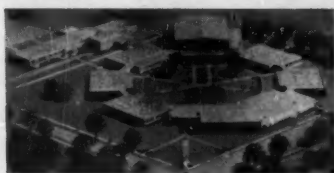
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OUR COVER . . .

Basically campus styled in orientation, the octagonal cluster layout of the Mt. Pleasant, Mich., high school permits well-defined zoning of academic areas. The school, a result of co-operative planning with the school of education of Central Michigan College, possesses many unique instruction features, as Superintendent LeCronier attests (page 29).

A review of your JOURNAL for July (pg. 6) —→

WILLIAM C. BRUCE, Editor

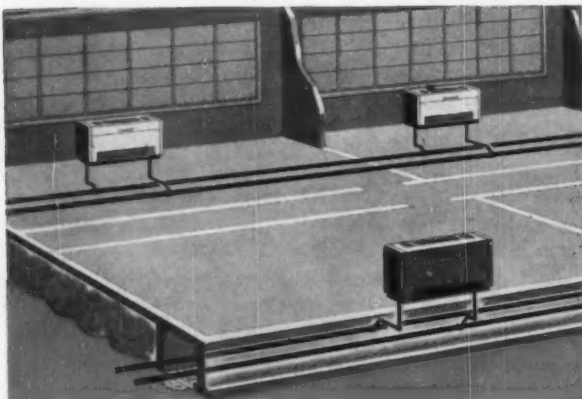
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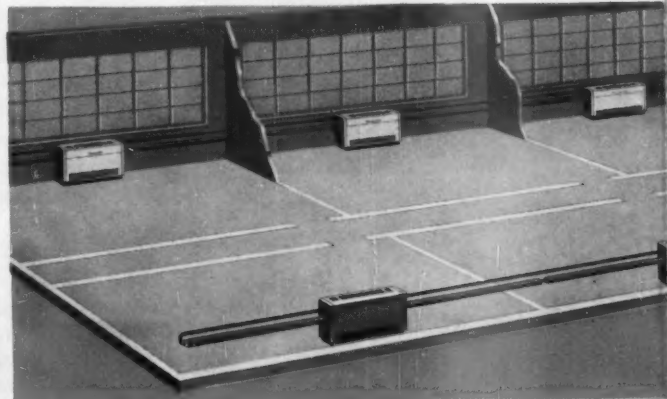


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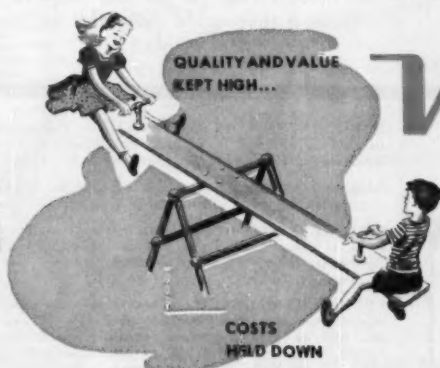
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Your JOURNAL for July

Summer is, traditionally, the time to read all the articles that you have set aside during the previous 12 months "to read when I get a chance during my vacation." To the list that you have compiled, we would like to recommend several items from your JOURNAL for July, important items that we feel deserve a portion of your precious reading time.

From the top of the selection:

1. How can we professionalize teaching? From the standpoint of popular esteem, teaching has not reached the status that medicine, as one example, has. Since putting a fully qualified, *professional* teacher in every classroom can probably do more than any other goal toward improving the education of our children, the professionalization of teaching can well be thought of as the great remaining goal of America's schools.

Dr. Fagan (page 9) offers a "blueprint" for achieving this vital goal, pinpointing what medicine did around the turn of the century to raise its status and, from this knowledge, outlining five steps that must be realized. His is a well-written article on a compelling subject.

2. An overwhelming number of schools across the country are reporting what they are doing to *deepen* their science and mathematics programs. To aid these schools and all others who are now scrutinizing this area of the curriculum, a jury of educators and a scientist has pooled ideas to produce a comprehensive inventory of basic suggestions on how to improve science and mathematics instruction.

We are very happy to print the first part of these suggestions (page 14)—those of special interest to larger schools. Your August JOURNAL will consider how smaller schools—those with limited staff and facilities—can achieve this enrichment of technical subjects.

While your schools may now be using many of the recommendations, you may find that others could help to sharpen your program. We hope, however, that you will review all the suggestions!

Other papers of note: (1) five guides toward successfully selecting a superintendent (page 17) may help you with probably the most important of the board member's tasks; (2) understanding how contract law affects school operation (page 22) will save the administrator from embarrassing, if not costly, situations; (3) the third article in a series of eight chapters on how to save money on school building (page 26) has clues on why the right architect can save you money.

This is, as usual, only a random selection. We hope you'll page through your JOURNAL for July and read what interests you most during the summer months.

Have a thoroughly delightful vacation!

The Editor

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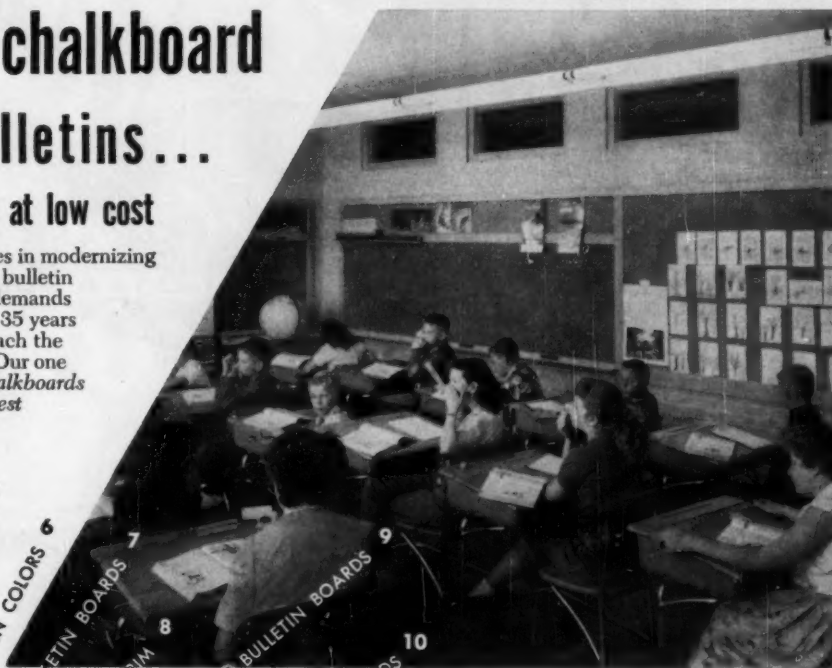


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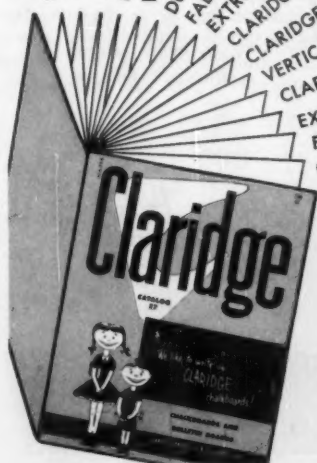
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BLUEPRINTING

a Profession

EDWARD R. FAGAN

Assistant Professor of Education, University of the State of New York, Albany

Professional status for teachers continues to be a shining goal for American educators. Enviously such educators look to the high professional status of doctors and sometimes wonder how the doctor, regarded pretty much as a "quack"¹ at the turn of the century, achieved his current high community status.

Explanations for the increase in the status of the doctors seem apparent in Abraham Flexner's report on medical education² published some 32 years ago. The import of Flexner's findings led to major revisions in the selection, staffing and training programs of many premedical and medical schools. Flexner's research methodology consisted of comparative study of medical school programs in America and Europe, particularly the programs of France, Germany, and England. The bases for evaluating these programs were statements by respective medical school graduates, comparisons of course content, and comparisons of clinical procedures in internship. Two recurring themes in the Flexner report are that a "broad gen-

eral education" should underlie all professional education and that practical application of course content is mandatory for effective professional education.

Both general education and its consequent practical application are fused, according to the Flexner report, to produce a professionally trained doctor. In teacher education, on the other hand, these two necessary ingredients (general education and practical application) seem to be poles apart. Pertinent statements which identified the recognition of these opposed viewpoints were made by New York State's Commissioner of Education, James E. Allen, Jr., as follows:

Knowledge of subject matter is of primary importance . . . deep understanding of subject matter carries with it the ability to teach.

At the other extreme . . . substantial professional preparation is necessary for every teacher before he should be permitted to instruct youth in the public schools.³

Now since these opposed viewpoints also characterized medical education from about 1850 to World War I, Flexner's thinking and research which helped to draw the opposed ideas to-

gether to produce a more professional doctor, seem to offer guideposts for professionalizing teacher education. This report, therefore, attempts first to indicate Flexner's statements about the role of general education as the foundation for professional education. It will then consider Flexner's findings relative to the staffing of professional institutions. Finally, it will suggest procedures inferred from Flexner's research which may be used to improve professional standards in teacher education.

1. General Education and Professionalization

Commenting upon the important role of elementary and secondary education in the preparation of doctors Flexner writes:

Sense perception, experiment, and inference have an important and increasing part to play in general education . . . and from its very start in kindergarten or the elementary school; they play an even larger role in the training of those who incline to scientific studies. Their general importance to the individual and to society gives them a place in the education of all children; their special importance to those who expect to make a career in science warrants increasing emphasis as the student passes through the secondary period.⁴

While many elementary schools have since 1925 (the time of the report) adapted their programs to the generalized philosophy which Flexner recommended, the teacher-training implications of his recommendations are as pertinent today as they were in 1925 and are contained in the following statement:

. . . but the spirit of instruction and the content of the textbooks are still generally excessively formal and abstract. Though the curriculum has been enriched, it is still the exceptional school in which the child actually leads a normal wholesome life—his interests awakened, his enthusiasm kindled, his power of intellectual application challenged and disciplined.⁵

¹Lawrence Bloomgarden, "Who Shall Be Our Doctors?" *Commentary*, June, 1957, p. 1.

²Abraham Flexner, *Medical Education* (New York: Macmillan Co., 1925).

³James E. Allen, Jr., "The Education of a Teacher," Address made to the students and faculty of Colgate University, April 7, 1957, p. 4.

⁴Flexner, *op. cit.*, pp. 60-61.

⁵Flexner, *op. cit.*, p. 61.

Five Steps Toward Professionalization of Teaching —

1. In-service training for unqualified personnel.
2. Drafting a Professional Practices Act.
3. Using the probationary period to eliminate unqualified teachers.
4. Evaluating professional courses of teacher training schools.
5. Increasing the number of males in the profession.

The teacher training problem posed by Flexner seems to be this: What courses, experiences, and procedures will get teachers to correct this "formal" and "abstract" methodology and promote Flexner's "spirit of instruction"? One solution to the problem is already suggested by the extreme academician viewpoint — "deep understanding of subject matter carries with it the ability to teach."

But Flexner seems to hold that such a solution is untenable and was one of the debilitating factors of medical education. Describing the impact of secondary education patterns for future doctors, he writes:

Medical education cannot be described or discussed apart from general education . . . elementary and secondary education should, of course, be conceived from the standpoint of the pupil as a human being, not as a future doctor, artist, or engineer.⁶

Flexner's suggestion is well taken in the light of recent exhortations that more and more "bright" students be given early specialization in such areas as science and mathematics. One of the fallacious assumptions of this early specialization, Flexner thinks, is the failure of educators to distinguish between the acquisition of specialized, abstract facts and their applications. Commenting upon this he notes:

Fortunately, education is something different from the acquisition of information and the control of mechanism. . . . Knowledge is necessary inasmuch as scientific method does not operate in a vacuum. A selection must, therefore, be made, and unless the teacher is perverse, it will be made with general, though by no means uniform, reference to objects of professional training.⁷

2. The Professional Staff

Flexner's use of the word "teacher" brings us to the second common area of medical and teacher education — constituents of the professional training staff. Throughout his report, Flexner recommends diversity of faculty background and practical application of whatever is being taught. Relative to faculty backgrounds he notes:

In theory the search for university professors is objectively made; yet . . . the scale tilts in favor of the institution's own graduates, partly because institutional loyalty is in America absurdly strong. . . . Thus . . . it sometimes happens . . . that a college graduate will study . . . in his own university, become an instructor and rise to a professorship practically without having left his Alma Mater.⁸

One effect of this inbreeding seems to lead to the second theme of Flexner's report: "The necessity for application of whatever is being taught." In teacher training, for example, it is sometimes possible for a "fair-haired" boy to run through five years of the curriculum,

to complete his doctorate with very little if any practical experience in public school teaching problems, then to turn around and begin instructing prospective teachers on the problems of secondary school teaching. And it was the theoretical approach to medicine combined with severely limited empiricism in medical education which led Flexner to describe premedical schools of the early 1800's as follows:

Loose and shifting bands of practicing physicians calling themselves a faculty tried to impart, chiefly by lecture, to heterogeneous uneducated groups of students the empirical knowledge — sound and unsound — which they themselves possessed.⁹

It is not surprising either that some of the products of such an education advertised their skills as a certain Dr. J. Teller did in *The Albany Knickerbocker* of June 28, 1867. Dr. Teller, in addition to advertising his "Old Established Hospital" also proclaimed that he was one of the world's greatest doctors, and that he had a book for sale at 25 cents, containing "hundreds of secrets never before published on how to choose a wife or husband."¹⁰

The atypical end products of medical education represented by men like Dr. Teller did not substantially change until as Flexner notes:

The proprietary medical school, long suspended in mid-air, an affair of lectures and examinations began more or less doubtfully to settle about a hospital.¹¹

This fusion of the courses and the clinic allowed planned organization of experience which made sense to the students and to the faculty. In teacher-training this is comparable to the "internship" program and student-teacher experiences which are the culminating part of teacher preparation.

Growing along with the American ethos of mass production and quantity thinking, both medical education and teacher education became concerned with the credit syndrome. The credit syndrome may be defined as the belief that the heaping accumulation of quantity invariably leads to quality. While the increase of knowledge seems a desirable goal for bettering any profession, it does not follow that such knowledge can be parceled out in credits. A necessary stabilizer to the pyramiding of credits, according to Flexner, is the provision of experiences which allow a student actively "to observe, to reflect, and to try"¹² the materials he has learned. In this statement Flexner again implies that student learning experiences are a function of effective teaching and by implication effective teacher

preparation. Elaborating on this Flexner adds:

. . . Effective learning is not . . . mainly a question of the particular method employed by the teacher; it is far more a question of the attitude and activity of the student. Strictly speaking, men are self taught. Teachers may indeed stimulate, guide, inspire, but students learn more than they are taught.¹³

Flexner seems to recommend an activity curriculum where the student assumes major responsibility for his learning. Thirty-one years later (1956) college English teachers made the same recommendation at a conference in New York City, hoping that the student assumption of responsibility would help solve problems brought about by the predicted exceptionally large classes.¹⁴

All of the material on professional staffing up to this point seems to support the fact that effective professional education is based on staff members who have a good general background, who allow students to develop their own learning experiences, and who practice what they preach, e.g., that they do not use didactic lectures to extol the virtues of student classroom participation.

3. Implications of Medical Professionalization for Teacher Professionalization

The medical profession is currently suffering from a shortage of doctors allegedly brought about by the Association Council in Medical Education's 1933 recommendation that the number of doctors graduated annually should be "drastically curtailed."¹⁵ The recommendation was evidently carried out and is still in force because, as recently as 1955, the AMA insisted "needs for additional facilities for the education of physicians are exceedingly difficult to determine," and while proposing "constant study and analysis," the AMA questioned whether such needs could ever be accurately predicted.¹⁶

The moral suggested from the historical excerpt on medical professionalization listed above seems to be this: The time to implement the blueprint for a profession is during the period of shortage when qualified people are in highest demand. However, the writer does not wish to suggest that teacher-training institutions use the planned shortage technique of the AMA in order to achieve this professionalization. Rather, let us suggest that the current 141,300 unqualified teachers¹⁷ be replaced by qualified graduates of teacher-training institutions. Theoretically, this

¹²Ibid., p. 183.

¹³E. R. Fagan, "Unprecedentedly Large Classes: Exploratory Solutions," *College, Composition and Communication*, 7:167-169, Oct., 1956.

¹⁴Bloomgarden, *op. cit.*, p. 2.

¹⁵Ibid.

¹⁶U. S. Department of Health, Education and Welfare, *Annual Report 1956* (Washington, D. C.: U. S. Government Printing Office), p. 194.

⁶Ibid., p. 59.

⁷Flexner, *op. cit.*, p. 13.

⁸Ibid., p. 46.

⁹Flexner, *op. cit.*, p. 41.

¹⁰Quoted by Charles Mooney, "Only Yesterday," *The Knickerbocker News*, [Albany, New York], June 29, 1957, p. 13.

¹¹Flexner, *op. cit.*, p. 41.

¹²Flexner, *op. cit.*, p. 177.

replacement should be relatively easy since schools employing teachers on temporary certification have only to report that the conditions for granting the temporary certificate to unqualified teachers have not been met, and the certificate could then be withdrawn or the school could be refused state aid.

Actually, though, many unqualified teachers are given a sort of *sub rosa* tenure. Under this *sub rosa* tenure system, the teacher crawls along toward meeting the professional standards set for her position, and consequently, the salary paid to this person can be well below that set for qualified teaching candidates — an economy measure which allegedly has been used by a few administrators. Regardless of whether or not these unqualified people are excellent in the classroom, the fact that a certification system has been established seems to demand that the system be enforced or the whole certification process be dropped. When a state like New York (rated high in the country in education in many ways) has almost one fifth of the 14,559 teachers certified in 1951-52 operating under temporary certificates¹⁸ and when nationally, 40.9 per cent of all grade school teachers have no college degrees¹⁹ (part of most certification requirements) it seems time to do some serious pruning of the probationary teachers.

A Five-Point Program

Using some of the lessons learned from the foregoing material, at least five steps would seem advisable to bring teaching to a higher level of professionalization. These five steps are as follows:

1. In-service training for unqualified personnel
2. Drafting and implementing a Professional Practices Act
3. Using the probationary period to eliminate unqualified teachers
4. Evaluating the professional courses of teacher training institutions.
5. Increasing the number of males in the profession

In-Service Training

The numerous methods of carrying on an in-service training program, e.g., inviting "experts" to address the group, having the state provide consultants, having the colleges offer extension courses at the school — all these and more are well known to school administrators. The point to be made is that as yet surprisingly few schools have made use of this effective way of improving their otherwise unqualified

people.²⁰ While there may have been strong reasons why unqualified personnel were appointed to teaching positions during the war, there seems to be no reasonable excuse for these unqualified people to remain unqualified in the light of the many services for professional improvement which are currently available.

Professional Practices Act

If teaching is to be a profession a Professional Practices Act must be adopted. Through such an act teachers will be able to control and discipline the kind of people who come into the profession. Although we may never reach the status of the medical professions' AMA, we will make some professional progress as California's experiments in this direction have seemingly indicated.²¹ Of course, a Professional Practices Act implies that teachers may have to sit in judgment on other teachers, an act from which many teachers would prefer to abstain. But teachers have to realize that incompetents who are allowed to teach give the entire profession a bad name. A corollary of this Professional Practices Act implies that amendments of the current tenure system may be advisable.

Using the Probationary Period Effectively

Lacking a Professional Practices Act, the stop-gap measure to controlling those who would be teachers is careful excision of undesirables in the allotted probationary period. Too often, administrators who should know better feel that maturity will straighten out what to others is an obvious misfit for teaching. Until a Professional Practices Act is a reality, and with the increase in the high quality candidates being groomed for teaching today, little hesitation should be used in pruning the unfit during the probationary period.

Evaluating the Professional Curricula

In view of increased technology (automation and television to mention two of the recent considerations introduced by science) educators at all levels should take a careful look at the teacher preparatory patterns throughout their states. This is especially true when one considers that the type of investigation Flexner made of medical education is not without counterparts in teacher education which reveal very few recent changes from recommendations made 32 years ago. Charters' and Waples' moun-

mental study of teacher education²² and Peik's study of the University of Minnesota's professional curriculum²³ are two outstanding examples of thorough scientific evaluations of teacher-training patterns. Since that time, periodic outbursts of how teachers should be trained, what skills are needed in the classroom and a host of other articles on teacher preparation and evaluation reflect nothing more than a relisting of skills, problems, and curricular patterns noted by Charters in his 1929 study.²⁴ In all of these studies, too, it is the professional educator who does the rating, evaluating, and recommending. Perhaps the time has come to have some impartial research team examine teacher-training patterns.

Another school of thought²⁵ on teacher education holds that one cannot teach skills for a profession like teaching since the constant flux in value systems makes these learned skills outmoded upon graduation. Instead, a philosophy of teaching based upon generalized ideas with some illustration which teaches general approaches to problem solving has more value, for it allows adaptations to specific situations.

The answer to the problem of effective curriculums for teacher preparation probably lies somewhere between the two extremes of teaching the one thousand and one tasks most teachers must perform²⁶ and an abstract, philosophical preparation for teaching. The point to be made is that if the much desired professional status is to be achieved, a sensible and useful program of professional preparation must be developed.

Increasing the Number of Men

Perhaps one of the most immediate ways of increasing professional status among teachers would be to increase the number of men in the elementary and secondary schools. As reported in the 1956 edition of the *Statistical Abstract of the United States* the percentage of males in teaching, exclusive of principals and supervisors, was 24.4 per cent in 1952, the last year this item was reported. The low point for males in the profession was in the twenties 14.4 per cent; the high point for males in teaching dates back to 1880 when a startling 42.8 per cent is found.

¹⁸W. W. Charters and Douglas Waples, *The Commonwealth Teacher-Training Study* (Chicago: University of Chicago Press, 1929).

¹⁹W. R. Peik, *The Professional Education of High School Teachers* (Minneapolis: University of Minnesota Press, 1930).

²⁰Cf. Charters, *op. cit.*, A. S. Barr, *The Measurement and Prediction of Teaching Efficiency: A Summary of Investigations*, NSCTE, June, 1948. J. E. Marsh and E. W. Wilder, *Identifying the Effective Instructor: A Review of Quantitative Studies 1900-1952*, Air Force Personnel and Training Research Center, Lockland Air Force Base, San Antonio, Tex., 1952 (AFPTRC-TR-54-44).

²¹William H. Burton, *The Guidance of Learning Activities* (New York: Appleton-Century-Crofts, 1952), see "Preface."

²²Charters, *op. cit.*, pp. 493-535.

¹⁸University of the State of New York, *Forty-Ninth Annual Report of The Education Department* (Albany, N. Y.: State Education Department, 1955), p. 53.

¹⁹C. Winfield Scott and Clyde M. Hill, *Public Education Under Criticism* (New York: Prentice-Hall, Inc., 1954), p. 39.

²⁰Cf. Ray C. Maul, *Teacher Supply and Demand in the United States* (Washington, D. C.: National Publishing Co., 1951), p. 13, and *Forty-Ninth Annual Report* (*loc. cit.*), where the number of unqualified people stay the same from year to year.

²¹Raymond L. Collins, *Frontiers in Education*, a published address made at the Associated Public School Systems Zone Meeting, Allentown, Pa., Nov. 19, 1956, p. 9.

There seem to be several reasons why a preponderance of females in teaching tends to weaken the profession. First, the fact that the United States is regarded, at least sociologically, as a male dominated culture means that prestige is ascribed to those professions where males predominate. For example, a committee appointed by President Nathan M. Pusey of Harvard reported that:

For better or for worse (elementary school teaching) seems to be regarded as work with children and therefore as the appropriate activity for women on a transitory basis.²⁷

While the above committee report was based on a survey of Harvard and Radcliffe students, and while few people would regard those institutions as typical of the American college population, the feelings expressed about the "transitory women" in elementary teaching tends to be borne out by the statistics on the number of women at the elementary level. Here, again, medicine and law have a low ratio of female to male. Second, the stereotype of the simpering old school marm — that dedicated, underpaid philanthropist — who gives up marriage, children, and contact with reality to dedicate her life to summer travel and pursuit of professional duties — this stereotype has all but become fixed in the minds of many Americans through mass media.

All these familiar female references tend to indicate in a society based on a male power structure that "teacher" is a noun, female in gender. Third, and perhaps most important, the fact that the majority of teachers are females means that voting in professional teaching organizations is to some extent controlled by the female. And this control in turn tends to mean that new or controversial ideas tend to be voted down. For example, women teachers who are able to support themselves on \$3,500 a year are reluctant to antagonize school officials about salary increases. Salaries are but one area where the debilitating influence of the unprofessional female is apparent. There are many other areas where static, unprofessional women teachers tend to anchor teaching somewhere below the professional surface. Statements about the female in teaching are not meant to be categorical. Certainly there are exceptionally fine and professionally-minded women in teaching. But if teaching is ever to achieve the high professional status that it holds among European countries,²⁸ America, like the European countries, will have to at least balance the ratio of male to female. ■

²⁷U. S. Department of Health, Education and Welfare, "Education Fact Sheet" (Washington, D. C.: U. S. Government Printing Office, June, 1957), p. 9.

²⁸R. Freeman Butts, "Liberal Arts and Professional Education in the Preparation of Teachers: An International Perspective," *The Educational Record*, 38: 263-279, July, 1957.

Education Goes to the Fair

IRVIN H. HIMMELE

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Co-ordination, Buffalo, N. Y., Schools

For the past four years the school boards of Erie County have co-operated in an educational exhibit at the Erie County Fair held annually at Hamburg, N. Y., during the third week in August. While it is always difficult to evaluate the impact of any exhibit, let alone one that is termed "educational," by the ordinary criteria of attendance and interest this co-operative venture seems to have paid off.

Prior to 1954, participation in exhibits at the Erie County Fair was limited to a few nearby schools. At the spring meeting of the Erie County School Boards Association it was voted to set up a co-operative exhibit which would show the complete picture of public education in Erie County at the Fair. Frederick Sievenpiper, president of the association, designated a committee under the direction of Dr. Walter J. DeLacy, a member of the Lancaster Board, to co-ordinate materials for the display. The school boards had the co-operation of the State University College for Teachers at Buffalo, the Erie County Technical Institute, and the University of Buffalo. Dean Leslie O. Cummings of the school of education of the University of Buffalo was one of the active leaders in securing the co-operation of the institutions of higher education.

The directors of the Erie County Fair provided a tent in addition to the regular Education Building for a display of pictures, charts, architects' drawings and models to help show to the public the wealth of opportunity in public education, how it is financed, what are its goals, and what are some of its problems.

The new idea of an integrated display with a broad base of co-operation

and support from all the school boards of the county met with a very favorable response. The attendance at the 1954 school exhibit increased. The directors of the Erie County Fair were impressed and voted an increased allowance for the exhibit. School superintendents and principals became interested and enthusiastic about the possibilities to be attained through the exhibit.

In 1955 Dr. Joseph Manch, now superintendent of the Buffalo schools and a member of the exhibit committee, suggested a series of themes around which the exhibits for 1955, 1956, and 1957 were integrated. The first in 1955 presented "What We Teach" or the curriculum. In 1956, the emphasis was on "How We Learn." In 1957, the theme was "Why We Learn" or the goals of education. In 1958, the theme will be "Science in the Schools."

Each year there have been special exhibits and activities featuring students and displays to tell the story of education activities throughout Erie County. Each year the committee has made physical improvements in the educational building at the Erie County Fair to make the exhibits more attractive and effective. Each year the attendance has increased and favorable public response has been more evident.

An essential part of the co-operative venture has been the actual participation by members of boards of education of Erie County in the direction of the education exhibit during Fair week. This may be more important than the financial support which the association has furnished.

Under the leadership of Mrs. Ruth Eggleston of the Kenmore board of education, committees of board members have assumed responsibility for

**A county fair exhibit:
a choice opportunity
to report to your patrons
on the progress
and problems
of their schools—**

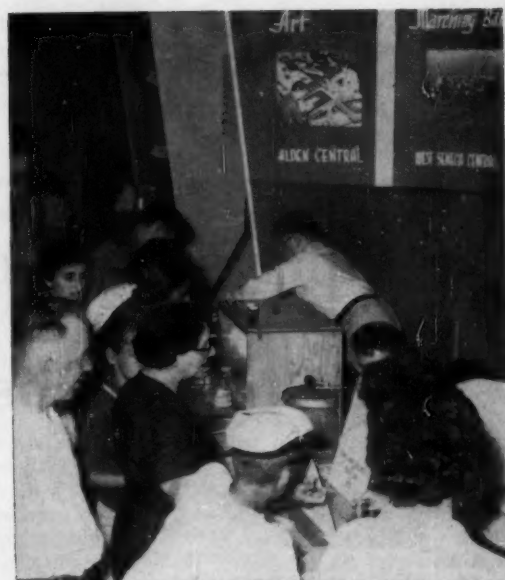
checking attendance, distributing literature, and exercising general supervision of the exhibit. These board members know, at firsthand, of the thousands of interested spectators passing through their exhibit.

The highlight of the 1957 exhibit was a closed circuit TV demonstration. With the co-operation of the TV division of the New York State Education Department, technicians from the educational television experimental project at Brockport State Teachers College and the manufacturers of television equipment, demonstration lessons were presented several times daily. Every day a busy schedule of films, slides, interviews, and demonstrations prevailed, involving several hundred participants during the Fair week.

It is estimated that nearly 50,000 spectators passed through the educational exhibit building during the 1957 Erie County Fair.

Education, in 1958, has become headline news. It is more important today than ever before that the general public have an accurate concept of the goals, procedures, methods, problems, and accomplishments of our great venture in mass education. Boards of education are going to the public with larger school budgets each year. Public support is related to public understanding. As representatives of the general public, school boards often enjoy generous public confidence.

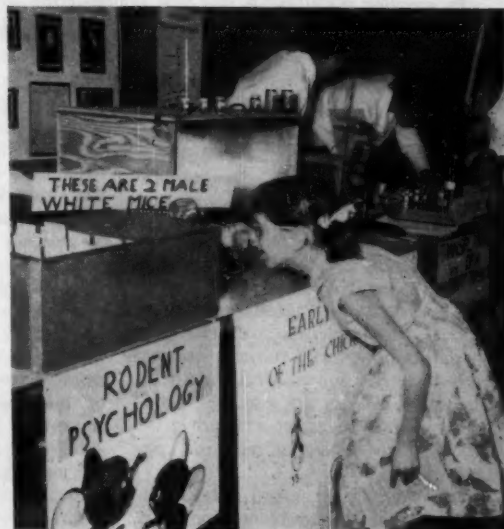
But it certainly seems clear that, in 1958, school boards would do well to utilize every avenue and agency to render a favorable report of their activities. The co-operative County Fair, exhibit, as the Erie County School Boards Association attests, is one avenue that definitely pays off! ■



Interested Erie County fair-goers view an exhibit devoted to "science in the schools" and learn about the work of their schools from demonstrations conducted by students and teachers of Erie County, N. Y., schools.



Projects in home-making, especially kitchen planning, told a story for mothers and future students (above).



High point of the science exhibit was the "performance" of two mice sponsored by the biology department of the schools.

Improving Science and Mathematics Instruction

LLOYD B. URDAL, HENRY M. REITAN,
ALFRED B. BUTLER, and GORDON E. McCLOSKEY

A jury of three educators and a college physics professor pooled ideas on ways and means to improve science and mathematics instruction in our schools. Their suggestions, analyzed for practical adaptability in average districts, have been divided into two parts: those which apply to larger schools and those specifically for schools in smaller districts. A general introduction and the first part appear on these pages; your August JOURNAL will feature the second part: those suggestions especially suitable for schools with limited staff and facilities.

I

INTRODUCTION

Our children live, and will work, in what is frequently called the age of science. Clearly, immense and rapid scientific developments are changing our production processes, our occupations, our needs for natural resources, the types of energy we use, the kinds of goods and services we consume, the relationships of communities and nations, and our leisure.

At an increasingly rapid rate, technology influences our economic life.

Laboratories, automatic machines in factories and offices, research and development are already characteristics of modern economy. Each year they become more important aspects of the civilization we cherish.

Youths' opportunity to enter many modern occupations depends upon adequate science education. The percentage of our workers doing tasks requiring some type of scientific training has been increasing for decades. Social scientists are agreed that the percentage will continue to increase in the decades ahead. In December, 1957, the President's

Committee on Scientists and Engineers said:

"The dawn of the so-called atomic era is only a phase of the scientific revolution. The world has already moved with giant strides into an age when man is no longer merely adapting nature's raw materials to his use but is actually creating new materials, releasing new sources of power and setting himself new goals which will radically change civilization. Although the paths along which the scientific revolution will lead cannot be clearly foreseen, the uncertainties of the future in no way hide the fact that this country will need more highly trained and highly skilled scientists and engineers than we have ever before thought necessary. And there is every reason to believe that the pace of change will be much more rapid than during any previous period in our technological development."

Knowledge of scientific concepts and facts increases all peoples' capacity to live well. Scientific knowledge helps people improve health, housing, food supplies, community services; it helps them consume products wisely. It enriches our leisure time. Indeed scientific literacy is an essential of responsible citizenship.

National defense is clearly technological. So long as we are confronted with a danger of military attack, we will need technically trained people who can produce complicated weapons and maintain the vast industrial plant essential for defense. Likewise, effective relationships with urgently needed allies are influenced by our scientific and technical capabilities. The confidence people of other countries can have in American leadership is influenced by our capacity to help them develop the resources and industries they need to raise their living standards and to contribute their share to our mutual defense.

These are all good reasons for our increased interest in science education. Fortunately, the urgency of improving that part of our school program is widely recognized.

Science Education and the Humanities

Scientific training alone, however, is not adequate. Indeed, alone it could be disastrous. As President Eisenhower pointed out in his November 13 radio-TV address, in the future it will also be more urgent than ever that our people know how to keep our economy strong, that we learn better ways of working with our allies, that we develop ever clearer concepts of humane ideals so essential to civilized use of our expanding technical powers and to continuation of our international leadership.

Along with improving science training, it is equally urgent that we improve instruction in other equally social studies, communication, art, music, and health. These too are basic to our national capacity for defense and for living as free people. The President's Committee on Scientists and Engineers emphasized this point by saying:

"It would be foolish self-delusion to deny that in the technical manpower field, the United States is in competition with the Soviet Union. But it would be equally self-destructive for a democracy to take the narrow and materialistic course of diverting all of its best talents into scientific and technical studies. We must produce more scientists and engineers but we cannot neglect our cultural and spiritual growth. We must continue to develop our heritage in the arts, the humanities and the social sciences without which our national life would not only be flat and flavorless, but would lack the informed and well rounded citizens on whom effective democracy is based."

Some will ask, "Must we improve all parts of our school program at once?" The answer plainly is "Yes." Both national defense and effective living in the modern world require that we do so. Nothing less will be adequate. And our economic ability to support education is sufficiently great that in no case can it be argued that making essential improvements in science education necessitates neglect of other areas.

Three Over-All Goals

But we are concerned here with how we can improve science instruction. Let's be sure we have in mind all aspects of our elementary and high school science job. It includes all that we commonly think of as mathematics — arithmetic, algebra, geometry, trigonometry, and in some schools, calculus, which are basic to work in other sciences. It includes all that we think of as general science, biology, chemistry, and physics. It includes formal instruction, clubs and activities, and out-of-school experiences.

Adequate plans must be based on three large objectives:

1. To train the scientists, engineers, and technicians we need to operate and improve our modern productive system and to maintain adequate defense.
2. To provide all citizens with the training they need to make wise and effective use of our growing bodies of scientific knowledge.
3. To relate improvements in these areas to equally urgent improvements in other equally important parts of our school program.

Let's recognize the fact that the total task is immense. *Adequate improvement will require years of effort and unprecedented expenditure.* Let's recognize that any school system can make *some improvements immediately with moderate expenditures but fully adequate improvement will require continuous effort for years and larger expenditures.*

Drs. Urdal and Reitan are assistant professors of education, Dr. McCloskey is professor of education, and Dr. Butler is associate professor of physics — all at the State College of Washington, Pullman.

Improve Science Instruction to Achieve These Objectives

1. Train the scientists, engineers, and technicians we need to operate and improve productive systems and to maintain adequate defense.
2. Provide all citizens with the training they need to make wise and effective use of our growing bodies of scientific knowledge.
3. Relate improvements in these areas to equally urgent improvements in other equally important parts of our school program.

The Present

Any school district can immediately take some, or all, of the following steps:

Help the teaching staff improve instruction. Good teaching is the heart of all education. Since the present supply of science teachers is limited, immediate improvement will depend largely on the extent to which we help teachers who are already employed teach better.

Many school systems have already set up special committees or have asked regular curriculum committees to devise means of improving science and mathematics instruction. In many communities these committees include interested citizens who have capacity to help mobilize public interest and support.

The procedure complies with time tested principles of administration. It utilizes staff experience and combines the efforts of people who are familiar with school organization with those who have other useful viewpoints. It sets the stage for systematic, orderly development. It guards against impractical or extreme action which would in the end impede progress.

Already such committees have found the following procedures to be practical and fruitful.

Provide more adequate teaching materials and facilities. In thousands of districts textbooks are tragically out of date. Often few, or no, reference books are available. In many schools, materials for teacher demonstrations and pupil experimentation are inadequate or unavailable. In spite of universal agreement that in high school laboratory experience is essential, in many schools laboratory space is inadequate or non-existent.

School equipment manufacturers and publishers have made greatly improved science and mathematics instruction materials available. Any local curriculum committee can provide a list of needed supplies, equipment, and space and a schedule of acquisition priorities.¹

Encourage teachers and pupils to make more effective use of equipment

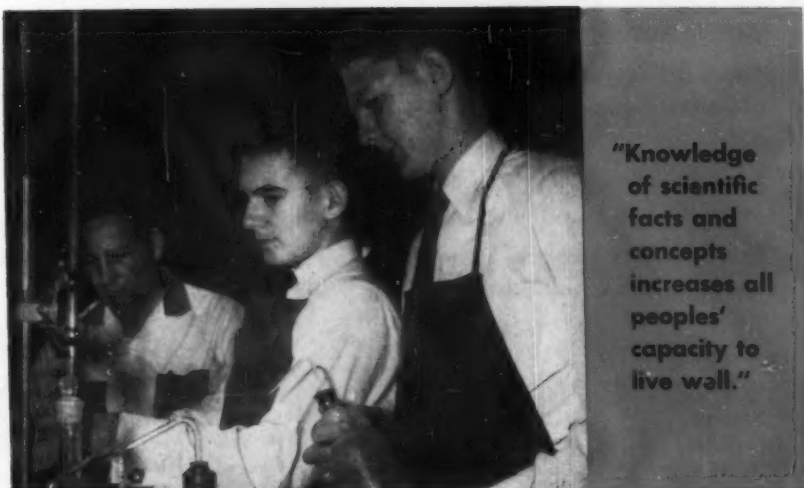
and materials on hand. Numerous committees have found useful equipment gathering dust in closets, or seldom used, because teachers do not understand its use or fear that pupils will damage it.

Make better use of community resources. By consultation with local industries, field trips, summer jobs for pupils, and scholarships can be increased. Local scientists, physicians, engineers can be invited to speak to classes or work with science clubs. Some local industries donate used or out-moded equipment which serves valuable experimental purposes. By these means pupils obtain firsthand experience and more interest in scientific professions.

Encourage and help teachers to get advance training in summer school or by full years of graduate work. A growing number of national governmental, professional, and industrial groups are offering scholarships. The number will probably be increased sharply in the near future. By working with local industries or industrial organizations, numerous boards and administrators are obtaining scholarships for teachers. Many districts pay part of summer school costs for their teachers. In many communities other leave and salary policy adjustments will be necessary to encourage advanced training. Such policies, of course, must apply to all teachers.

Organize local teacher seminars or workshops. This is being done in many communities in co-operation with consultants from colleges and scientific associations. A number of districts can jointly finance such projects. There is particular need for studies of course content and means of motivating pupils. Because science is evolving rapidly, it is constantly necessary for teachers to keep subject matter up to date. The old problem of devising content which emphasizes understanding of principles rather than memorization of isolated facts and formulas remains unsolved. Means of co-ordinating the science instruction provided in various grades can be improved.

¹For a detailed guide see, *School Facilities for Science Instruction*, National Science Teachers Association.



— Courtesy Somerville, N. J., schools

"Knowledge of scientific facts and concepts increases all peoples' capacity to live well."

Adequate means of helping pupils sense the value and dignity of science remain to be devised. A recent Purdue University study shows that "many young people have deep seated prejudices against scientists, misconceptions about the role of science in today's world, and appalling ignorance about science as a career." They consider scientists to be "eggheads" and "oddballs."

Make professional literature available to teachers. New books are continually available.

Encourage and recognize staff research efforts. Opportunity for research activity adds to a teacher's skill and stature, increases his enthusiasm for his work, and encourages him to remain in the teaching profession. Many are now leaving because they have no facilities for research or receive no recognition for it. Equally important, opportunity for research will improve their abilities to stimulate and enlighten pupils.

Encourage teachers to be active in professional organizations. Leave policies and travel funds which enable teachers to attend conferences and conventions are needed. Industries commonly recognize such meetings as means of improving employee performance and pay expenses of those who attend them. At present many teachers can attend such meetings only if they pay substitutes plus their own travel expenses. These financial barriers make it difficult for teachers to obtain the new ideas and stimulation which can be derived from professional meetings.

Improve counseling services. Many school systems lack systematic means

of either obtaining or using facts about pupil's vocational aptitudes or interests. A counseling program which does so has long been recognized as an essential of any adequate school system. While carefully guarding against temptation to force any pupil into any vocation, pupils having scientific aptitudes and interests should be identified and acquainted with opportunities in vocations for which they show promise and with advanced training and scholarships available to them. Such counseling is, of course, equally necessary and valuable for students possessing other types of aptitudes and interests.

Consider the need for new courses. Some people propose to improve science and mathematics instruction simply by adding courses. These proposals should certainly be considered, but they should be considered with caution.

At present, science and mathematics courses are more available than inaccurate interpretations of some statistics indicate. An analysis by Harold C. Hand shows that only between two and eight per cent of our high school pupils attend high schools which do not offer chemistry, physics, algebra, or geometry.²

Of course if a district does not offer a reasonable program of courses it should prepare to do so as rapidly as capable teachers can be obtained. However, we must recognize that adding courses in name only may contribute little to learning. Pupils will learn little from a "physics" course taught by a teacher who knows no physics or lacks ability to teach. At

²Harold C. Hand: *Principles of Secondary Education*. Harcourt Brace, 1958, p. 129.

present well-trained science and mathematics teachers are scarce, but some are available and more effort to employ them can improve local programs. Fortunately, colleges, government, and industry are co-operating in an unprecedented attempt to train more. The future supply of people qualified to teach is expected to be more adequate, but the problem of inducing them to teach will remain.

This brings us to the crucial matter of increasing teachers' salaries. For more than a decade an increasing industrial demand for scientists and mathematicians has been steadily depleting the supply of teachers of these subjects. Every major study made in the past five years concludes that supply can be maintained or increased only by raising salaries substantially. It is idle and deceptive to talk of expanding offerings until salaries are made competitive with those paid by industry.

The Future

Underlying all effort to improve any part of our education system is the great value we place on informed and responsible freedom for each individual. So far we have sought to make large amounts of many kinds of knowledge available to the largest possible number of youth. We have sought to help each youth develop all of his capacities to make free choices about how he can best make responsible use of all knowledge. Our schools have sought to stimulate and guide—to develop broad humanitarian insights—to develop in each person an enlightened sense of personal responsibility for work and contribution to mankind. We have always sought to improve all aspects of schooling but so far we have refused to allow state supported schools to force any youth into any pattern of training or into any occupation. Now as an external threat focuses our attention particularly on science education, let's make additional effort to improve that part of schooling with equal concern for the other equally important means of helping free men protect and foster their way of life.

Technological developments will surely continue at an accelerated pace. We know that high school enrollments will also increase. We can, and must, increase the number of youth obtaining high quality education in all areas—science, social studies, the arts, and humanities. Now is the time to plan for adequate budgets, staff, buildings, and instruction programs. Now is the time to begin the long job of helping citizens understand that the need is great and that the cost will be substantial. ■

The second part of this article, which will appear in your August JOURNAL, will contain suggestions for science instruction improvement for the smaller high school.

Five hints toward successfully —

Selecting a New Superintendent

ELVA DITTMAN

Long Beach, Calif.

Sooner or later every school board faces the responsibility of hiring a new superintendent. Since most board members realize that the selection and employment of a new superintendent is, in fact, the most important duty that the board will perform, they sincerely want to find the best man for the job. They want to secure for their school district the superintendent who will do educational work of the highest caliber.

Many board members, however, are keenly aware of the fact that they themselves do not have the educational background upon which to judge adequately the educational qualities of the candidate. This has led a number of boards to ask nearby universities and county offices of education to do the screening of prospective candidates for them. The process has much to commend it; but, like anything else that is done by remote control, it is not without its disadvantages. For one thing, these county and university people, who are doing the screening, will not have to sit face-to-face with the individual selected regularly for a contractual period of three or four years, as board members and superintendent must when they are confronted with routine educational and administrative tasks, personnel problems, and community matters. Since this aspect is a fact and since even illustrious university professors are human beings, their judgment may not be as acute nor as critical as if they themselves were to serve actively on the board that engages the candidate. This comment is not to imply a lack of honesty on the part of the screening committee. But living with the result of one's decision is always much more demanding than making a decision involving a consequence that one will not personally be required to confront.

Second, much as the school board may desire and need help, it will be the board itself not the university or the county office who will be legally responsible to the people for the selec-

tion of the superintendent. Though unpleasant to contemplate, should the superintendent prove unsatisfactory to the district, it will be the BOARD that will have to dismiss him. At that crucial moment the panel of university professors or county experts will be far removed from the situation.

Third, though the screening committee may be composed of the best intentioned group of individuals in the world, they can hardly presume to understand the history of each local school district asking for assistance, nor can they have a truly intimate picture of the current needs of the district. What is more, most university and county officials have for many years dealt with local school matters in a theoretical, rather than a practical, manner. Only day-to-day actual contact within the elementary district itself can serve as an authentic standard of judgment.

A "Do-It-Yourself" Plan

It seems, therefore, that the board members will need to develop a kind of do-it-yourself-assistance plan or technique. Even though a committee of experts is employed for the screening, the board must retain the right and face the duty of making the final selection. As guiding principles board members might profitably devise procedures such as those listed below and consider carefully the items enumerated. Questions to be used ought to reflect as much as possible the current and historical pattern of the particular school district and could serve as a springboard for additional thought and contemplation.

1. A Successful Educational Career

Has the candidate a record of a varied but *successful* educational career? Each board will want to set up minimum standards; for instance, a man or woman aspiring to the elementary superintendency ought to be able to provide proof of having taught successfully

1

Set up a minimum standards of a successful education career.

2

Determine to your own norms the candidate's maturity of character.

3

Use state teachers' association placement officers and local college faculties.

4

Have a "jury" of experienced principals meet two or three finalists.

5

Grant a one-year probationary contract after a selection has been made.

for at least ten years with a large number of those years having been devoted to the elementary grades. Also, he ought to be able to show evidence of having been a successful principal for not less than five years. Now this standard simply means that the candidate would have a total work experience of 15 years in his chosen field. Surely 15 years' preparation is not too much to ask of an individual who aspires to the position of superintendent. The superintendency, which is the highest status to be achieved in the public schools, demands not only leadership and understanding but substantial knowledge of educational philosophy, problems, and administrative technique.

If the board accepts such a standard as described above, it should be adhered to even in relation to the hiring of someone who already has had the title of superintendent in a former position. In that case not only should his success be checked in that capacity, but it should not eliminate the requirement of 15 years' educational experience. Among educators there is a growing awareness that many of our educational difficulties today are the natural result of placing in higher administrative posts well-meaning, but inadequately prepared, young administrators who came up "too fast" instead of thoroughly learning their business. If the board desires to improve the instructional program of the district, the members will need to ascertain not only the academic preparation of the candidate but the level of achievement he himself was able to reach. Unfortunately, today many young men who majored in physical education are being employed in superintendencies where knowledge of curriculum is of paramount importance. There is no quick, easy way to become an educational leader who can command respect of his co-workers, the board, and the community.

2. Character and Personality

Since capable administration demands not only an acceptable educational background and experience but also a personality and character able to exert remarkable judgment under pressure, questions and standards merely relating to educational experience will not suffice. No doctor's degree, in and of itself, guarantees this maturity of character and, as such, can be interpreted by board members as a "seal of approval" of any individual. Many board members find this idea a difficult one, for somehow the very word "doctor" carries with it to the layman the traditional prestige based upon the medical use of the term. Regardless of the candidate's degree the board will be forced to judge his character as a person.

The regimen of ascertaining character does not need to be a high-powered secretive program. The board members can talk with candidates, ask leading questions, and judge whether, according to their own moral standards, his character is one that *to them* seems good, substantial, and decent.

The questions devised ought to be those which did, or might, occur locally. Once used for a candidate, the question ought not to be repeated with another individual. A situation, like that below, might be described to the candidate:

A superintendent hired and gave a contract to a young man in July. In the middle of August the superintendent received a letter from him stating that he wished to be released from his contract. Before answering, the superintendent discovered that he had just signed a contract to teach in a community not too far away. The superintendent wrote asking the teacher to state his reasons for requesting to be released. His answer was that his wife had been placed in a district in which he too could be employed and which would enable them to establish a home. This superintendent felt a strong moral duty to teach the young man the ethics involved in the situation. The superintendent telephoned the county office and reported that the teacher had broken a contract. Then he telephoned the other superintendent. As a result the young man lost both jobs. What would you have done? Why? Would you have done the same thing?

Hypothetical situations based on the school district's past experiences can do much to enlighten the board regarding the type of person being interviewed.

Judging a man's character, especially that of one who has considerable verbal facility, is not easy. It takes time, *much time*, and careful study leading to understanding. For that reason a board will need, in every way possible and for as long as necessary, to plan and follow means of ascertaining the candidate's character. One rule must be observed: *Don't under any circumstances decide upon any candidate in a hurry!* Do not be persuaded by subtle inferences that the school district will fall apart if Mr. Jones or Dr. Smith is not employed at the *next* board meeting. School districts are quite stable; though heads come and go, the basic foundation, composed of loyal, sincere teachers, principals, secretaries, maintenance men, and custodians will continue steadily on doing a good job though the top teeters precariously.

3. Use Placement Offices

In some localities there is a tendency for boards to engage the same people repeatedly as a screening committee. Some boards prefer faculty members of a particular university. Much consideration is needed if this procedure is adopted. For the most part the university professors have their greatest contact with people who are continuing their studies in the graduate school or with those individuals who are aggres-

sively pursuing the acquaintanceship of certain education professors. It becomes well known in educational circles which professor exerts considerable influence in the hiring of local administrators. Such a procedure does not always bring to light the best prepared or the most worthy candidate. It does bring together people anxious to increase their earning power and knowing the right people, sad to say, may serve as a substitute for genuine achievement. Though the board may elicit the assistance of an influential faculty member, it would profit the members to consider other candidates who filed their papers with the state teachers' associations' placement offices. These facilities are available to the candidate for the cost of a percentage of his first year's salary. Other public and private agencies, including the regular college and university placement offices, ought to be asked for available candidates.

4. Principal Evaluation

Before definitely deciding upon a specific person, it will help the board to have the three finalists meet individually with a committee of experienced principals who have been employed by the district for a number of years. No board member ought to be present at these meetings. After these conferences the principals can meet in executive session with the board. The function of the principals will be that solely of educational consultants. Here a frank, honest discussion of the three candidates will furnish the board invaluable information.

5. Probationary Contract

If the board customarily grants a superintendent a four-year contract, it might be well to consider the possibility of extending that contract by one additional probationary year in order to give both the board and the superintendent an opportunity to decide whether the relationship is mutually satisfactory. In many school districts teachers are on probation for their first three years; but a superintendent, for some reason, needs to serve *no* probation. Districts, therefore, sometimes find themselves with an unsatisfactory superintendent who has a legal contract for four long years. However, if the first year could be a trial period for both parties, many disagreeable situations could be avoided. Once the probationary period has elapsed, the contract would automatically continue for the customarily established period of four years.

No panacea can be found for this complex and important problem, but the more time, thought, and effort a board expends in *preparing* to employ a superintendent and in screening candidates, the greater will be the percentage of success.

Glendale's one-day, end-of-year conference —

A Shot in the Arm for Administrator Fatigue

JAMES H. WILLIAMS

Superintendent, Glendale, Calif., Schools

For a number of years in the Glendale schools there has been a meeting of the central office staff and the field administrators at the conclusion of each school year. These meetings of about two hours in length have been conducted by the superintendent and have been semiformal in nature. Their purpose has been to report on matters related to the closing of the current year, to project summer work, and to plan for the school year ahead. They served a purpose, but a rather stale, routine type of atmosphere had developed in connection with them.

A One-Day Conference

At the suggestion of the staff it was decided to change the form of this annual meeting in the hope that new life and purpose would result. As a follow-up an arrangements and planning committee was appointed. This committee gathered reactions from field administrators and central office staff members and came up with a plan to hold a one-day conference during the week following the close of the school year. The planning included a morning session, a luncheon, and an afternoon session.

This proposal was acceptable to the central office group and to the field administrators as well. The committee next turned its efforts to the development of a program. After thoughtful probing, it was decided that discussion for the morning should be devoted to, "The Improvement of Communication Between Professional Personnel," and the afternoon to a discussion of areas in which there was considerable personal interest.

Listed below is the schedule of the meetings:

9:00-10:00 General session
10:00-10:15 Coffee break

10:20-11:45 Buzz sessions

Group I — How can communication among administrators function well?

Group II — How can communication between teachers and administrators work smoothly?

Group III — How can we help inter-teacher relationships?

Group IV — How can communications between parents and teachers be improved through normal school contacts?

11:45- 1:15 Luncheon

1:15- 2:30 Buzz sessions

Group A — Morale

Group B — Discipline

Group C — Personalizing Secondary School Teaching

Group D — Business Office Operations

Group E — Personnel Operations

Group F — Professional Relations

Group G — Supervisory Services

2:30- 3:30 General session

3:30- Adjournment

The Glendale School District is unified (under one board of education

and one administration) from kindergarten through junior college, and is served by an administrative and supervisory staff of approximately 60 people. This number includes all certificated personnel in the district central office, the junior college director and deans, and the principals and vice-principals from the elementary and secondary schools.

Through a process of predetermined choices the total staff was divided into four groups of approximately 15 each for the morning buzz sessions, and as nearly as possible each group is given representation from the central office and the elementary, secondary, and college levels.

The conference was held at the junior college. During the morning general assembly, several announcements of district-wide interest were made, and the planning committee gave an overview of the day's program. Each of the four



Superintendent Williams (center) reviews events of the school year with members of Glendale's administrative staff.

Glendale's one-day, end-of-year conference creates "a feeling of unity..."

predetermined groups assembled in assigned rooms, elected a chairman and a recorder, and held their discussions on their assigned topic.

The luncheon was a pleasant and enjoyable interlude. The seating was by place cards and served as an excellent "mixer" to broaden staff acquaintanceship, particularly between the various educational levels represented. The arrangements committee prepared a short entertainment program for the luncheon meeting. A good lunch and the pleasantries of the occasion were sufficient to send the group to their afternoon session in high humor.

Attendance at the various afternoon buzz sessions was on a voluntary basis. At the conclusion of the group discussions, there was another general assembly at which the recorder from each of the morning discussion groups made a report.

At this concluding session an evaluation questionnaire was filled out by each person. The questionnaire was to record reaction to the day's conferences, to get individual suggestions, and to ascertain whether the group would propose to have a similar conference the next year.

Within a few days a digest of the reports given by the recorders and of the information supplied through the evaluation questionnaire was prepared and sent to all who participated. The digest contained a list of itemized difficulties in communication procedures together with suggestions for improvement. It included also a list of individual comments listed on the questionnaire which had obvious bearing on recognized operational problems.

Since the afternoon buzz sessions were devoted to topics of personal interest, no formal summary was made of the discussions. It was clearly evident, however, that these sessions did offer excellent opportunity for free and uninhibited expression, and that served a worthwhile purpose as an end in themselves.

Outcomes of the Conference

What were some of the outcomes of this one-day conference? There was unanimous opinion that the conference had been worthwhile and that it should be repeated. Many thought two such meetings per year would be helpful.

With reference to communication between administrators, it was suggested that basic decisions reached in the superintendent's cabinet, which is composed of the superintendent and the three assistant superintendents, should be communicated in writing to all field administrators and central office staff

members. It was further suggested that basic information given by telephone to one principal by a central office administrator should be sent to all principals. Still another suggestion asked that policy decisions reached in principals' meetings be recorded and coded in such a way that the principals could develop a type of operational handbook. This it was thought would foster more uniform practices in schools.

The suggestions appeared to indicate clearly the need for an administrative handbook or manual. In the Glendale schools there is a rather well-defined code of administrative regulations, but they have not been carefully edited and published under one cover. This conference has hastened the development of such a manual which is now in progress.

Pertaining to teacher-administrator communications, it was agreed that the field administrator has the responsibility to inform properly teachers of district policy and to interpret that policy to them. It was evident that administrators believe that teachers are happier and more effective when they understand clearly the operational regulations which must be observed. The administrators indicated complete acceptance of their responsibility for this function, but admitted to certain shortcomings in its execution. This discussion closed with an expressed dedication to do a better job in keeping teachers properly informed on district and building administrative policy.

In discussing inter-teacher relationships it was suggested that more opportunity for informal contacts between

teachers was badly needed. It was indicated also that much importance is attached by teachers to a proper and judicial recognition by the principal of the contributions of each teacher. This engenders a better teacher attitude toward the principal and toward fellow teachers. It was pointed out that teachers must feel relaxed and secure, they must be encouraged to express their ideas to the principal and to fellow teachers, and they must feel some real sense of value to the school and the whole school organization.

Communication with parents was recognized as being of prime importance, and it was suggested that all teachers need to be continuously reminded of the necessity to be tactful, sympathetic, and frank. It was stated that frequent orientation or refresher meetings on this subject were needed, just as they are necessary in business to maintain proper consciousness on the part of salesmen for the product and the buyer.

A Morale Booster

As superintendent of schools it is my judgment that the meeting was a worthwhile morale booster. It created a feeling of unity and gave each person a greater appreciation of himself and his job, as well as improving mutual respect among colleagues. It is sometimes forgotten that a school system is operated by people and that these people can become starved for an opportunity to express themselves and to associate informally with their colleagues. A one-day conference, properly scheduled and programmed, can add that much needed shot in the arm to a fatigued staff. ■



Elementary administrators compare notes and enjoy "talking things over" during Glendale's end-of-the-year conference.

The Board and Change-of-Boundary Petitions

STEPHEN F. ROACH

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Petitions proposing changes in the boundaries of existing school districts — usually relating to the detachment of territory from one district and its annexation to another — are employed frequently nowadays in district reorganization programs.

The specific procedures to be followed in connection with such petitions are generally outlined in the applicable legislative enactments or school codes of the various states. But since, frequently, the final approval or rejection of a proposed boundary change requires the exercise of a board's discretionary authority, questions may arise in the minds of board members concerned as to the type of evidence to be considered prior to their making such determinations.

An interesting case¹ concerning this latter aspect of school board operations was recently decided in the Appellate Court of Illinois.

Facts of the Case

Pursuant to the applicable Illinois statutes, the voters of the White School area of the Lovington school district petitioned the Piatt County board of school trustees for the detachment of the White School area and its annexation to the Atwood school district. A hearing on the petition resulted in its being denied. Upon review by the County Circuit Court, this denial was reversed and the requested detachment and annexation ordered.

This latter decision was now being appealed on the ground it was contrary to the weight of evidence.

The testimony showed that the White School area was served by a one-room six-grade school with one teacher and 23 pupils, including the one child of school age residing in the area. Also in the Lovington district, some three or four miles from the White School area — and open to the White School area children — was both a grade and high school. In the adjoining Atwood district, at Hammond — also about three or four miles from the White School area — was a grade school with 156 pupils. Due to the fact that the school building at Hammond had been

destroyed by fire, classes were being conducted in a gymnasium which had been divided into rooms by dropping tarpaulins from the ceiling. A bond issue for a new Hammond school had been approved but the building had not yet been constructed.

The applicable Illinois statutes provided that upon the filing of a petition, as here, for the detachment and annexation of school district territory, the county board was to conduct a public hearing thereon. At the hearing, the board was to "hear evidence as to the school needs and conditions of the territory [involved] . . . as to the ability of the districts affected to meet the standards of recognition as prescribed by the [State] Superintendent of Public Instruction and . . . [as to] the division of funds and assets which will result from the change of boundaries. . . ." Thereafter, "the board was to determine whether it is to the best interests of the schools of the area and the educational welfare of the pupils that such change in boundaries be granted. . . ."

The Issues

The specific question at issue here, of course, was whether the evidence as presented in this particular fact situation was sufficient to justify the approval of the requested detachment and annexation of territory in the school districts concerned.

Of broader interest, to school board members generally, would be the views of the court as to the relative weight to be given the various categories of evidence when the "best interest" of a school district is the basic point under consideration.

Findings of the Court

The present court first noted that both of the contesting districts — i.e., Lovington and Atwood — were fully recognized by the state authorities and financially able to maintain good schools. It commented also that there was no serious question of loss or gain in school revenue involved.

The opinion then pointed out that the principal reason given by those favoring the detachment and annexation was that all of the petitioners "are part of the Hammond community, doing their trading and banking in Hammond."

Other reasons advanced were that the

petitioners were better acquainted in Hammond; that, if their children attended the Hammond School, the parents could participate in PTA; that the Hammond School was larger and offered better facilities; and that when the new Hammond School was built, a new agriculture department was to be added.

The principal complaint made against the Lovington district was that White School was small; that it had neither a physical education teacher nor a recreational program; and that because of the small number of pupils in classes there was little mental competition among them. "However," the opinion noted, "none of the witnesses furnished the board with any facts tending to prove that the educational program of the White School was in any manner deficient."

The present court also noted that if the White School were closed, there would be facilities for all of its pupils at Lovington.

It was upon consideration of this and related evidence, the present court pointed out, that the County Board of Trustees had found that the granting of the petition would not be "for the best interests of the two school districts, nor for the best interests of the students insofar as their educational welfare is concerned."

The present opinion then went on: "While it is contended by petitioners that their reason for desiring annexation to the Atwood district is the fact that the latter is in a position to furnish better school facilities, the record indicates that the [actual reasons are] the personal desires and convenience of the residents of the petitioning territory."

"The welfare of the affected districts and their pupils as a whole must control rather than the wishes of a few, and such petitions [are to be] granted only where the benefit derived by the annexing and affected areas clearly outweighs the detriment resulting to the losing district and the surrounding community as a whole."

"Where, as in the case, the record of the hearing indicates full compliance by the board with the requirements of the school code that certain evidence be heard, it becomes obvious that . . . personal desires or conveniences . . . must not be regarded as controlling to the exclusion of all other material factors."

"Assuming, as the record justifies us in doing, that adequate facilities are available to the children of the White School area at a school within the Lovington district a decision by the trustees to transfer such area to the Atwood district would appear to be arbitrary and without foundation."

Thereupon the present court reversed the judgment of the lower trial court and upheld the decision of the county board — which decision had ruled against the petition for detachment and annexation.

In its opinion the Appellate Court made one other comment of significance to local school board members: "Admittedly," it said, "The board of [school] trustees was in a far better position than is this court to pass upon the several factors involved in this proceeding. They had the benefit of personally observing the witnesses and they could also draw upon their knowledge of the local situation as an aid in making their determination."

¹*Lorenson et al. v. County Board of School Trustees of Piatt County et al.*; cited as 142 N.E. 2d 493 (Ill.) (1957) in the *West National Reporter System*.

Ben Waite, the superintendent, was keenly displeased with his business manager. A manufacturer's representative had offered by air letter a booster pump that was badly needed and in short supply, and the business manager had accepted the offer by return air mail.

"I told him," fretted Waite, "that he should have telegraphed or telephoned. If he loses that pump . . ."

The business manager's acceptance, however, accorded with the rules of contract law. That the manufacturer would have been bound by either a telegraphed or telephoned acceptance if he had received it is beside the point. Waite obviously was unaware that an acceptance is effective when communicated to the offeror, and that in most states communication is effected when the acceptance is placed with the means of communication used by the offeror.¹ In laymen's language, the contract was formed when the business manager placed his properly addressed, stamped letter in the U. S. mail.

That Ben Waite and others like him are aware of the rules underlying much of the law that is important in school management is apparently an ill-founded assumption if their comments and actions reflect the facts. Ben and his contemporaries seem much more firmly based in such matters as the integration decision, for example, than they are in the law governing everyday business relationships. Often lacking legal counsel and the business know-how of larger systems, administrators in medium-sized and small school systems tread a perilous legal path if they know no more of the law than the illusions and misinformation common among the laity.

The branches of civil law that impinge upon the administration of schools include the law of contract, agency, sales, torts, bailment, landlord and tenant, negotiable instruments, real estate, taxation, insurance, and perhaps others. Because of space limitations, the following applications to school situations have been limited to everyday contract law.

A case might possibly be made for suggesting that most superintendents in smaller systems and rural principals read at least a handbook on business law if not take a course in it,² since virtually the same rules apply to school business as to any other sort of business. Underlying almost every business transaction is some phase of general or special contract law. As a starting point, then, what is a contract that it assumes so much importance?

What Is a Contract?

The classic, oversimplified definition of a contract is that it is an agreement en-

forceable by law. Many agreements, of course, are not enforceable by law. For example, you arrange with the teachers' committee of the board to interview a prospective coach at 2 p.m. on Tuesday. He does not appear. The committee members and you lost valuable time while waiting; nevertheless, the promise breached by the coach is not one for which the law provides you a remedy.

had accepted his services.⁴ When the form of written contract is not prescribed, a simple exchange of letters may satisfy the requirements.

Under the Statute of Frauds the contracts that must be in writing include those affecting any interest in real property, those which specifically extend beyond a year, and those for the sale of goods exceeding a specified amount. If, in your

Fundamental rules of —

Contracts and School

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Contracts may be classified and described in several ways. In *express contracts* the terms are stated in so many oral or written words; in *implied contracts* the terms grow out of the words and/or the conduct of the parties. To illustrate: The principal of a rural school, who is authorized to do so, telephones the nearest plumber to replace the main water pipe, which has burst. A promise to pay at the market price for the materials and labor is implied, and an enforceable agreement exists though no price or promise to pay was put into words. Thousands of such contracts are entered into and carried out daily as a matter of course. A troublesome example arises when an injured child is taken from school to a physician. An implied promise to pay for his services exists—but by whom?

Two other common classifications of contracts are *oral* and *written*. An erroneous notion persists that only a written contract is enforceable by law. The example in the preceding paragraph (plumbing repair) is of an oral as well as an implied contract, and on the facts stated it is enforceable at law. Special laws and the Statute of Frauds,³ however, do require that certain contracts be written; if so, an oral agreement on an included subject is not enforceable. Most states require that teachers' contracts be written. If a person teaches without a written contract in one of these states, he ordinarily could not collect his salary even though the board

state, school boards are permitted to make contracts extending beyond a year, a contract between your board and a typewriter agency for its repair services for three years must be in writing to be enforceable. If, again in your state, contracts for the sale of personal property amounting to \$100 or more must be written, an oral contract to buy supplies costing \$110 cannot be enforced however many witnesses there may be to it—one reason salesmen carry order blanks for you to sign. Other contracts under the Statute of Frauds are not likely to arise in the ordinary course of a school's business affairs.

The best evidence concerning the terms of a written contract, assuming no intent to defraud exists, is what is written therein. Oral (parol) evidence may be introduced only to prove omitted terms; it may not be used to add to or otherwise alter the original terms or be in conflict with them. Finally, though many contracts need not be in writing to be enforceable, the specificity and permanence of the details as they appear in writing argue strongly for putting virtually all important contracts into written form.

Elements of a Contract

The following amplified definition reveals the viscera of a contract: A contract is a relationship resulting from a voluntary agreement between two or more competent parties to do or not to do, for a consideration, something that is legal. The elements

¹Essel R. Dillavou and Charles G. Howard, *Principles of Business Law*, 5th ed. (Englewood Cliffs, N. J.: Prentice-Hall, Inc., 1956), p. 34.

²Business managers, it is assumed with some hesitation, have or should have such preparation.

³Harold F. Lusk, *Business Law* (Homewood, Ill.: Richard D. Irwin Inc., 1955), p. 206 ff.

⁴But see *Tolleson Union High School v. Kincaid*, 53 Ariz. 60, 85 Pac. (2d) 708, an exception to the rule.

of a contract include: (1) competent parties, (2) an offer and an acceptance, resulting in (3) a meeting of the minds, (4) to act within the law (5) for a consideration. What do these terms actually mean?

1. Between Parties

Contracts are between "parties"—individuals or legally constituted groups such

the subject matter of the contract is outside the scope of its legal authority; second, when it is not acting as a body or unit in legal session.⁸ The purely clerical chore of signing a contract, however, may be done by the members after the meeting.

2. Offer an Acceptance

The first step toward a contract between competent parties is taken when one party offers to do or not to do something for the other party. The board offers to sell a used automobile for \$895; it writes Miss Baker to offer her a teaching position in the primary division at \$4,200 a year; it offers Hunter Jones an option for \$100 on certain land for a period of 14 days; the business manager orders 100 gallons of paint from Bouzard; the Upchurch Construction Company bids \$250,111.10 to erect a new school building.

All of the foregoing are valid offers. None involves a social event; none is merely an "invitation to trade" as a circular letter or a price list are. The offer to sell the car is a general offer to anyone who cares to buy it at the quoted price; the others are particular offers to specific individuals, and no one else may accept these offers. Each is intended to be definite. It is assumed that each has been communicated to the offerees; otherwise, no offer exists. Finally, no compulsion is involved—the offers are voluntary and there is no evidence that any of the offerees is being coerced to accept.

The next step: The offer must be accepted without qualification, and the acceptance must be communicated to the offeror within a reasonable time if no time limit has been set. If Miss Baker writes that she will just love to teach in your primary division, but not in the second grade, she has made a new offer (called a counter-offer), and no contract exists at this point. Further, the board must actually receive her unqualified acceptance. The board's offer was by mail; should she telegraph, her acceptance is binding upon the board only if the telegram is delivered. If, however, she accepts by mail, her acceptance becomes effective when it is placed with the postal authorities, not when the letter is delivered in the board's office. (But if the form of a teacher's contract is prescribed by law, it must be in that form to be enforceable.) Finally, the intended acceptor cannot be forced to break silence to reject the offer—silence is *not* assent in forming a contract.

3. A Legal Meeting of Minds

Many contracts founder on the rocks of vagueness—there is no "meeting of the minds." The terms must be as precise as is necessary to eliminate misunderstandings, not an easy goal to achieve. The classic in teachers' contracts is that of an

offer and acceptance of a position at a "good wage." As might be expected, the matter reached the courts, who ruled that the salary was so indefinite as to preclude a mutuality of understanding and that, accordingly, no contract existed. Not only must the terms be definite, but they also must be legal. Thus, a contract to teach without a certificate or at a lower salary than required by statute or regulation is not valid. Nor can the board collect the amount stipulated in a contract renting the school gymnasium for an illegal purpose.

4. The Consideration

Finally, no contract is valid unless there is consideration—an exchange of values between the parties, such as cash, services, goods, promises, or a combination of these. Unless misrepresentation or fraud can be shown, the courts seldom look into the adequacy of the consideration. A board may find that it has agreed to pay an exorbitant price for a poor school building site. If good faith exists, the contract is probably enforceable—the courts do not protect the inept bargainer.

Contracts are "discharged" when the parties do what the agreement stipulates, but the terms of a given contract need not always be carried out precisely or in full; for many contracts a performance that is satisfactory or substantial in the eyes of a reasonable person is sufficient. Though a leaking roof would hardly be held satisfactory in discharging a reroofing contract, the use of a different kind of roofing cement from what may have been specified probably would be considered substantial performance. But if an artist contracts to paint a mural in the foyer of the high school subject to the approval of an art committee, the painting may be rejected if the committee does not like it provided only that the rejection be in good faith.⁹ When taste and judgment are involved, what a reasonable person thinks is not the criterion of performance.

If a contract is broken, money damages may be sought; however, a teacher or other school employee who breaches a contract is seldom sued because the amount awarded is not likely to be worth the effort and the possible bad publicity. Boards, however, are assessed damages and perhaps costs of the suit when they are successfully sued after they break an employment contract. The employee must seek a similar position to mitigate his damage, but his search need not be a wide one; if he is unsuccessful in his quest, then tendering his services daily places the board more clearly in default by showing that he was ready to do his part. In consequence, boards should make employment contracts (as well as all others) with care and break them with reluctance, if at all.

as school boards. Today virtually every one is presumed to be legally competent except the insane, the intoxicated, and the infant, the last named being of direct concern to the school. Infancy in most states is the period under 21 years of age, though in some states a minor attains his majority upon marriage before 21 or upon becoming 18 years of age, especially in the case of women. Because an infant may disaffirm any contract he wishes, those contracting with him do so at their peril except in the matter of necessities, which the courts have made an infant liable to pay up to a reasonable value,⁵ but which may be less than the price he had agreed to pay.

What is a necessity? School books, supplies, and laboratory fees if for courses needed by the minor pupil probably would be held to be necessities. What is a necessity for one pupil, however, may not be one for another. Whether or not a drum majorette's accoutrements are necessities is highly debatable in view of a court's holding that a course in steam engineering was not.⁶ Nor could her parents be held liable for the debt any more than they could ordinarily be held for her torts, because of her minority.⁷

Is the school district or board itself ever not competent to contract? Yes—when

⁸William H. Schrampter, *The Law of Business* (New York: Rinehart & Company, Inc., 1947), pp. 76-77.

⁹International Textbook Company v. Connelly, 206 N. Y. 188, 195-6.

⁷Nor, incidentally, can she be legally dropped from school for not paying this kind of a bill, assuming the school had made the purchase upon her promise to pay the fund which had advanced the money.

⁸McCorkle v. Bates, 29 Ohio St. 419, 23 Am. Rep. 718.

⁹Lincoln Lavine, *Modern Business Law* (New York: Prentice-Hall, Inc., 1954), p. 103.

Management

N.S.B.A. REPORT

W. A. SHANNON Executive Director N.S.B.A.

A National Center for School Board Studies

For many years the National School Boards Association has hoped to find more effective ways of putting research to work for the improvement of school board service and operation. Such hope now appears closer to fulfillment. In a recent action, members of the NSBA board of directors unanimously approved the acceptance of a formal proposal made by officers of Northwestern University for the joint establishment of a national "Center for School Board Studies."

Clearly, one of the broadest avenues to the improvement of public education in America lies in raising the quality of school board membership and operation. Objective research in the broad area of school board service and activity is greatly needed in order to provide the bases upon which newer and more effective methods, techniques, and materials for school board improvement may be identified and developed. Stimulating such research would be the major function of the Center, the proposal for which grew out of extended discussions between representatives of the NSBA and those of Northwestern over recent months.

Purposes of Center

The Center for School Board Studies would work to identify major areas of needed school board research. It would undertake, and would co-operate with other universities and educational organizations in undertaking, specific research projects, and, in general, would constitute a major informational center wherein research findings would be collected, analyzed, and disseminated.

A fairly large number of research studies in the school board field have, of course, been undertaken in the past. Some of them have been sponsored and directed by both state and national school boards associations, working closely with consultants and trained researchers. Most of them have been the product of graduate students of education, working at the master's or doctoral levels under research-trained professorial committees. A few of these studies have been quite significant, providing the foundations for greater understanding of school board problems, and pointing rather effectively toward better approaches and

procedures. Most of the studies have been helpful. A few, regrettably have not—some of them have been so localized, for example, as to prevent any appropriate extension of their findings to other districts or areas.

The major point to be made, however, is that the wide field of needed school board research remains relatively untouched. Even if this were not true, past research often needs to be redone in order to check and update findings. Even with dependable and recent findings, the problem remains of how they are to be disseminated and put to practical use. Much good research, it is reasonable to suppose, is doing little more than occupying space on library shelves.

One of the areas of vitally needed research is that concerned with the orientation and training of board members. Past research has indicated not only that there is approximately a one-third turnover in board membership in the United States each year, but that it takes two years or more of service for most board members to feel that they are reasonably competent to carry out the serious legal responsibilities with which they have been charged. Identifying a common core of information which board members should possess, testing experimental techniques and procedures of direct instruction to board members for their relative effectiveness, discovering the best format, style, length, and other elements of printed materials which board members will read and use, and similar activities based upon objective research, could be expected to assist materially in bringing board members to higher levels of performance sooner.

New Headquarters

As part of its proposal, Northwestern University offered to the association space for NSBA headquarters in a University-owned building adjacent to the Evanston campus of the University. The NSBA has accepted, and will move from its present address in Chicago within the next few months. The new location will provide the National School Boards Association with the special advantage of close proximity to Northwestern's Deering Library, with

its important resources of educational and other material.

The action of the NSBA board of directors in approving the Northwestern proposal was in keeping with the national association's "Policy 23," which was adopted by the Delegate Assembly on February 16, 1956: "The National School Boards Association recommends the establishment of a school board study and research program which shall (1) organize and correlate existing studies, (2) plan and co-operate with other agencies in new and needed studies, and (3) distribute and publicize the findings."

NSBA Fellowship Program

At the same time that the National School Boards Association has been engaged in working out the co-operative Center arrangement with Northwestern, the organization has been developing complementary plans for establishing an NSBA Fellowship Program.

As presently envisioned, up to three outstanding graduate students per year would be competitively selected and appointed as "NSBA Fellows." Substantial grants would make it possible for such students to complete doctoral degree requirements in school administration and similar areas while serving as part-time NSBA staff assistants. The educational staff work in which they would engage would thus be closely allied with their doctoral interests, and would provide an opportunity for promising future administrators and educators to study the issues and problems of lay leadership in public education at close hand. Fellowship recipients would also be associated with many of the activities of the Center for School Board Studies, through which the uses and techniques of educational research could be studied in direct, problem situations.

Quality Boards Make Quality Schools

The services and activities of the National School Boards Association are based upon the belief that quality boards make quality schools. Carefully conducted research could do much to help insure quality boards in the school districts of America.

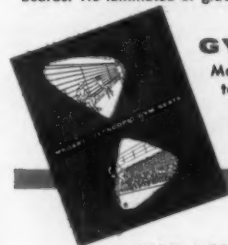
The action of the NSBA in working out the co-operative arrangement with Northwestern University for establishing a Center for School Board Studies represents one of the most important official acts which any NSBA governing body has taken in the history of the association. Mobilizing the techniques and methods of research for school board improvement must be adjudged a sound approach to the fulfillment of the fundamental purposes and objectives for which the National School Boards Association exists. In the past too much has been guessed, and too little has been known, about what constitutes good school board qualification and operation.

The solicitation of funds for the long-range support of the Center for School Board Studies, and for the NSBA Fellowship Program, is now under way. It is to be devoutly hoped that many farseeing organizations and individuals will help the National School Boards Association and Northwestern University in bringing to reality activities of such great potential promise.

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The Right Architect Can Save You Money

HAROLD W. BOLES

Educational Consultant, Newark, Ohio

3.

Proper architectural design and planning can save a board of education and the taxpayers, whom the board represents, many thousands of dollars in any program of new construction. However, the time to learn whether a certain architect follows capital-conserving practices is when he is being interviewed for possible employment. No board should ever employ an architect and then impose upon him ideas which are contradictory to his normal practices. Thus, it is imperative that any board interested in economical construction determine *before* employing their architect whether he can and does make use of many of the following suggestions, as there is no *one* big saving available to any architect.

These suggestions are listed in the order in which they were ranked in importance by educators and architects of 86 widely scattered school districts in which recent school construction has been completed at lower-than-usual cost.

No attempt has been made to reconcile obviously dichotomous suggestions (for example, suggestions numbers 20 and 52). Respondents felt that each of the listed measures could save money under certain circumstances. A reader can only fit his situation.

1. *Be sure drawings and specifications are complete, concise, and free of ambiguity.* If there are any elements which could create doubt, contractors are quite likely to "pad" bids to cover themselves in case they have misunderstood. It probably would be a good investment for a board of education to pay a reputable contractor to check over the drawings and specifications prior to issuing the documents to prospective bidders. Certainly, the specifications should contain a clause requiring bidders to report any errors, omissions, or discrepancies to the architect during the bidding period. The architect can then issue an addendum, clarifying the matter for all bidders.

2. *Take special care to eliminate waste areas.* Unless the architectural planner is particularly adept and experienced, he is likely to find that providing the required teaching and non-teaching areas without including some waste areas is a most difficult undertaking. In the past, many school buildings have included unused or unusable areas simply because the architectural planner could find no easy way to combine the *required* spaces unless he also included some nonrequired spaces.

3. *Hold down cubage by eliminating lofts, attics, basements, and other unusable spaces.* This is, of course, closely related to suggestion number two. Many school attics harbor little of value except pigeons. Some of the basement rooms which have been turned into undesirable classrooms in recent years were there because "it was easier (for the architect!) to do it this way!"

4. *Be sure the architect thoroughly understands the building budget from the start.* This is one of the many places where board members and architects use the same terms, but the meanings depend on which group is doing the listening. To many board members, "cost of the building" means gross cost, while to architects it usually means the total cost of construction contracts! The time to reconcile meanings is during preliminary discussions — *not* after bids are received. One good way is to have it in writing:

BUDGET FOR SCHOOL	
Item	Budgeted Amount
Land acquisition	\$.....
Construction contracts
Architect's fee
Legal expense
Advertising
Equipment
Site development
Contingencies
Total

5. *Use exterior ornamentation (such as cut stone, columns, or cupolas) only if it serves a useful purpose.*

Simplicity is beauty; gingerbread is passé.

6. *Hold numerous "give and take" conferences between architect and school personnel* in translating educational specifications into building sketches. The best architects in the world, even if they practice school architecture exclusively, do not know as much about schoolrooms and what goes on in them as do the people who occupy them day after day. Changes in preliminary sketches cost nothing but once working drawings are started, they come dear.

7. *Do not make many changes, even minor ones, after bids are received.* Architects often are criticized for "excessive change orders" when in reality those orders are for things which someone decides should be added *after* construction is in progress. Proper educational planning should obviate such whimsy.

8. *Plan one or more areas for multi-use.* Most educators are, understandably, less than enthusiastic about the rather common auditorium-gymnasium combination, but other, more functional combinations are possible, such as dining room-study hall, dining room-music room, playroom-corridor, etc.

9. *Keep roof lines straight.* Whether they are up and down or in and out, deviations from the straight line usually cost money.

10. *Allow the architect ample time to complete his drawings.* Unfortunately, no one has yet found a way to adapt automation to architecture. Each little line and dot must be hand drawn, and omission of any one can cost you money. It isn't just a question of "put more men on it," either, as there is a limit to the number of men who can work on a project where all phases must be as closely co-ordinated as is required in architectural drawings.

11. *Keep ceiling heights constant except in special areas.* Here are those ups and downs again! (See ¶ 9.)

12. *Make sure the building silhouette is quite simple.* The fewer the corners, the less the cost.

Sources of School Building Economy

What the architect can do to save dollars on school plant design and construction is presented in this third of a series of eight articles on basic ways to school building economy.

This comprehensive inventory of money-saving suggestions were analyzed by a panel of school plant experts for true economy—economy that lowers costs without diminishing educational values of the building—then rated for *proved worth* by builders of 86 nationally recognized "low-cost" schools in 34 states.

Published and future articles in the series are:

1. What the Administration Can Do to Reduce School Building Costs (May, 1958, SCHOOL BOARD JOURNAL, pp. 52-54)

2. Proper Educational Planning Can Help Reduce School Plant Costs (June, pp. 39-40)

4. How to Save Money on Sites and Site Development

5. Equipment Is Important to Economy

6. Some Construction Methods Cost Less Than Others

7. Materials Used Can Vary Costs

8. Insist on Economical Engineering, Too

13. *Do everything possible to assure minimum maintenance and replacement costs.* To reduce initial cost at the expense of added maintenance is false economy—robbing Peter to pay Paul.

14. *Have little or no basement.* Space below ground is more expensive than that above—and less desirable, usually.

15. *Make certain that all possible building extensions which may be foreseen are planned for now.* Adding anything at a later date can cost dearly unless there is a good way and place to add it. Such provisions do not just happen. Pay the architect his 1½ per cent fee for design and let him plan the entire building at one time, then buy working drawings only for the part you can build now!

16. *Adapt each building to its particular site.* One of the architect's special abilities for which you are paying is the ability to blend the man-made with the God-given. Let him use it, or you cheat yourself and your constituents. Moving dirt is costly, and should be done only as necessary.

17. *Avoid "school specialties" as much as possible.* Many such items are unusually high-priced, particularly if no competitive products are on the market.

18. *Use repetitive design elements.* Windows or doors which are interchangeable can be purchased in quantity and installed economically. Use of a module simplifies construction and results in dollar savings.

19. *Do not use parapet walls.* Their cost per square foot is the same as the cost for walls that enclose something other than air. Parapet walls may once have been used to hold down the roof, but good architects now have better methods for doing that.

20. *Make the building single story.* Walking is easier than climbing, and no one holds classes in stair wells.

21. *Do not use masonry designs unless they are quite simple.* To be sure, intricate designs are possible and decorative, with no additional bricks, but they take lots of time—and no mason's time is free.

22. *Make certain that plans are original and have not been used on any previous building.* Old plans are no more desirable than old clothes—and fit no better. A building designed for another educational program will not fit yours. Besides, architects find something in every building that could have been improved. A good architect finds many such things.

23. *Keep interior trim and millwork to a minimum.* Anyone who has ever built a house knows how distressingly slow "finishing" is after the house looks complete on the outside. One schoolroom is often as large as a small house, so you can imagine the time involved if there is much "finish" work.

24. *Use continuous fenestration.* Large areas of glass or large areas of masonry are simple to install, but alternating small areas of glass with small areas of masonry may double the labor cost.

25. *Be sure equipment needs are provided for when building plans are drawn.* Adding a gas line, a water supply, or an electrical service after construction is in progress may be unsightly and will certainly be costly. Yet, if the architect doesn't know about equipment to be used he cannot provide services for it in the original drawings.

26. *Keep the building perimeter regular, with few or no breaks.* (See ¶ 12.)

27. *Use large glass areas, thereby reducing the size of necessary finished interior wall areas.* Contractors tell us that high quality window walls cost about as much per square foot as do masonry walls, but masonry walls have to be painted or plastered or both on the inside, while glass is its own finish.

28. *Make certain that it is unnecessary to send many addenda items to contractors during the bidding period.* (See ¶ 1 and ¶ 10.)

29. *Be sure the building is conceived in plan before elevations and exterior design are considered.* Trying to adapt a functional floor plan to someone's preconceived

notion of what a school should look like can result in considerable waste of precious tax dollars.

30. *Request few alternate bids.* The simpler you can keep the estimating job for the contractors, the better will be their bids.

31. *Design the building, if possible, so that all footings can be dug with a trenching machine.* Such a machine is cheaper to transport and to operate than a back hoe or power shovel. It digs a straighter line, thus making forms unnecessary and saving on the amount of concrete used.

32. *Call upon the experiences of school maintenance personnel in planning finish materials to be used.* The practical experience of such people may be more valuable than the book knowledge of some architects, and may save maintenance dollars later.

33. *Make walls the minimum thickness allowed by building codes.* Such walls will be safe, and using a 12-inch masonry wall where an 8-inch wall will do achieves little, other than a 50 per cent increase in the cost of that wall.

34. *Use load bearing walls and little or no wall framing.* Many educators will undoubtedly frown on this, deploring the "loss of flexibility," but experience indicates that walls are seldom moved, even though they are nonbearing! However, a bearing wall can be removed by replacing it with a beam and columns, and the cost is not prohibitive.

35. *Pay particular attention to making the school plant blend with general surroundings.* This implies more than adapting the building to the site. (See ¶ 16.) A porcelain-paneled school probably does not belong in the Pacific Northwest nor does one made of Indiana limestone belong in New England.

36. *Submit building plans promptly to all required regulatory and advisory authorities.* If such authorities find errors, discrepancies, or omissions in the plans, corrections must be made in time for all

bidders to know of them. If those corrections come as change orders after the contracts are let, the correction will probably cost more than in the original bid.

37. *Don't use suspended ceilings.* Even if you feel the roof deck must be covered, there are better ways of doing that than by using the suspension system.

38. *Avoid the use of masonry sills and/or lintels.* They always cost money, and they often leak.

39. *Use mostly fixed sash, with no more than three ventilating sections per room.* A movable section costs several times as much as a comparable area of fixed glass, and each movable section has cracks on all four sides. Each crack is a potential leak for both air and water.

40. *Use a module.* If all elements are worked out on a modular system, there will be fewer costly special details.

41. *Keep the building perimeter to a minimum, with over-all form approaching a square.* The geometric form which encloses the greatest area with the least perimeter is a circle, but laying walls in a circle is costly and results in nonfunctional rooms. The square is the geometric form which encloses the next largest area with the least amount of a perimeter wall. In many regions, a square foot of perimeter wall costs up to three and one-half times as much as a square foot of partition wall.

42. *Make classrooms approximately square.* This helps reduce the perimeter (see ¶ 41), and is better educationally because it gives greater flexibility to room arrangements.

43. *Build in no equipment except that requiring plumbing connections.* Factory made and assembled cabinets, etc., can usually be provided at less cost than custom work. The former can be purchased separately, thus saving the 15 per cent or so which the general contractor adds on for his profit.

44. *Eliminate gutters, exterior downspouts, etc.* They add to initial cost and to maintenance cost.

45. *Make the gymnasium floor multi-use by using rolling bleachers.* This is much more economical than having to build a second gymnasium to get additional physical education space when much of the floor area is occupied by permanent seating.

46. *Request only additive alternate bids.* If you request a minus alternate, the amount of the deduction which the contractor allows is usually only his calculated cost of the item. Many contractors do not deduct the 15 per cent or more profit originally computed on that cost.

47. *Seek help from contractors in simplifying the building in the planning stage.* This is particularly valuable if your architect has had only limited experience. It might even be profitable for the board to pay a contractor to examine plans and make suggestions. (See ¶ 1.)

48. *Don't use pipe trenches.* They cost

money, and really help very little if pipes have to be replaced. Ingenious architects find better ways for running these lines.

49. *Try using open storage cubicles in place of lockers.* If pilfering is a problem, of course, this may not be practical. It can save money, if feasible.

50. *Use above-corridor space for the plenum for recirculated air.* Many times corridors can have lower ceilings than can classrooms, so an inexpensive floor (corridor ceiling) allows this space to take the place of a specially designed duct system and return air plenum.

51. *Use a roof overhang to help with light control.* Light must be controlled in some manner and many systems for doing it are expensive. The roof overhang, used with curtains or shades, may be one of the less costly devices.

52. *Make stairs as simple as possible.* The greatest possible simplification is elimination. If your site demands multi-story construction, the stairs need not be either ornate or massive.

53. *Make interior walls movable.* Advantages of this need to be weighed against those of using bearing walls. (See ¶ 34.)

54. *Eliminate corridors, or hold them to a bare minimum.* After all, they are used only to pass from one place to another. They do not increase the "pay load" of the building.

55. *Leave such things as service conduits, ducts, pipes, and structural members exposed and paint them.* If "painted in" with adjoining areas, they are inconspicuous and this method is certainly less costly than use of special trenches, chases, channels, etc.

56. *Place classrooms with their short dimension next to the corridor.* If rooms must be rectangular (see ¶ 42), this is a further possibility for reducing the building perimeter.

57. *Use outdoor corridors or covered walks.* (See ¶ 54.)

58. *Consider serving lunch to occupants of this building and one or more other buildings from a common central kitchen.* This can avoid duplication of preparation and storage facilities. However, don't overlook the facts: each building will probably need its own dishwashing facilities; you will need special insulated serving carts, loading ramps, transportation, and transportation personnel.

59. *Make your stage wall-to-wall, with no proscenium arch.* More front curtain is cheaper than are a beam and brick work, and you have the advantage of being able to vary the size of the stage opening.

60. *Place classrooms back-to-back with only exterior access.* This is probably more applicable in elementary than in secondary school buildings (see ¶ 54 and ¶ 57), because secondary classrooms vary more in size.

61. *Locate auditorium and/or gymna-*

sium in interior space with no side daylighting. Continuous masonry is less expensive than alternating glass and masonry; artificial lights are nearly always used each time those rooms are occupied, anyway; windows, if provided, have to be fitted with darkening devices.

62. *Eliminate the dining room and have lunches eaten in classrooms.* There are undoubtedly physical limitations as to the distance which it is desirable to have pupils (particularly little ones) carry food, but if you are going to use a central kitchen (see ¶ 58), "room service" becomes a real possibility. Unless the dining room has a secondary use, it is extremely costly space.

63. *Make the building campus-plan, with two or more separate units.* The generally lighter type construction can reduce costs.

64. *Use less window wall than is found in comparable buildings.* This is probably one of the most controversial subjects in school construction today. The one indisputable fact appears to be that continuous runs of either masonry or glass are less expensive than alternating panels of both materials.

65. *Make at least some interior walls of movable storage units.* Such units certainly cost less than walls and storage units, and they make possible the easy shifting of partitions.

66. *Plan the building so it can be easily converted to other than school use.* There have been striking examples of buildings designed to house pupils now but intended for conversion to industrial uses later—and without aesthetic or educational losses. This may not result in lower initial cost, but resale value can certainly lower long term costs if land use in the area is changing.

67. *Widen the corridor and plan it for additional uses.* One possibility is an elementary school corridor wide enough to serve as a multi-purpose room. Such buildings have been constructed in several places. Another, if the auditorium requires excavating, it is possible to use a widened corridor as the stage.

68. *Try using interior classrooms, with no window lighting.* This seems to work particularly well for rooms where there is an "activity" type program so that pupils are kept busy and do not notice the claustrophobic effect, if any.

69. *Use two smaller dining rooms rather than one large one, and plan them for additional uses, such as study halls.* Smaller rooms seem to adapt more readily to secondary usage.

Above all, remember that the architect is not a magician. The school board, the architect, the superintendent, and everyone else concerned must co-operate and try diligently to make use of many of these practices if significant savings are to be achieved. ■

Compact Spaciousness

The Mt. Pleasant High School

RUSSELL LeCRONIER

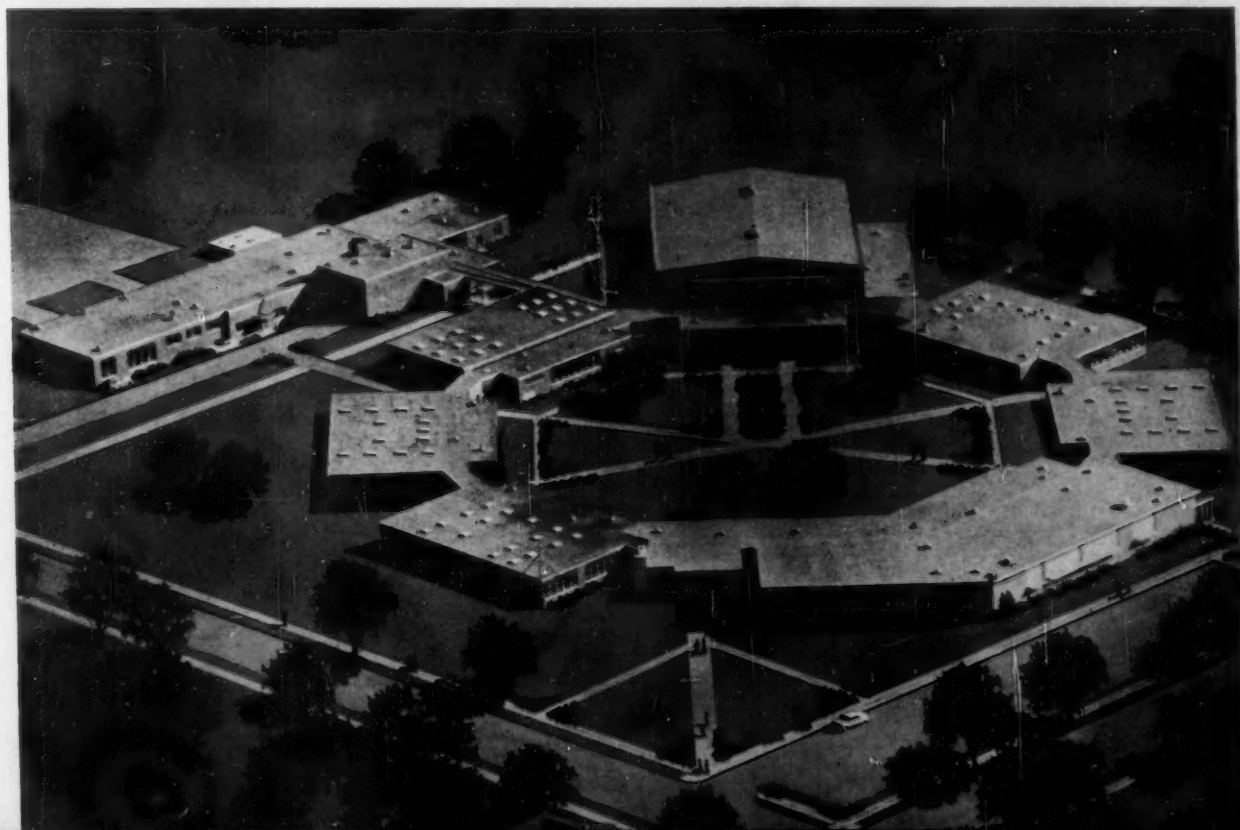
Superintendent, Mt. Pleasant, Mich.,
Schools

When the new high school at Mount Pleasant, Mich., opened its doors in September, 1957, its staff and 631 students were introduced to a laboratory for learning not only unusual in design but advanced in educational concept as well.

Octagonal in design, the main body of the school encloses an open court surrounded by classroom units, the administrative area, and the gymnasium. The vocational education unit is in a separate wing, connected to the central building by a covered walk.

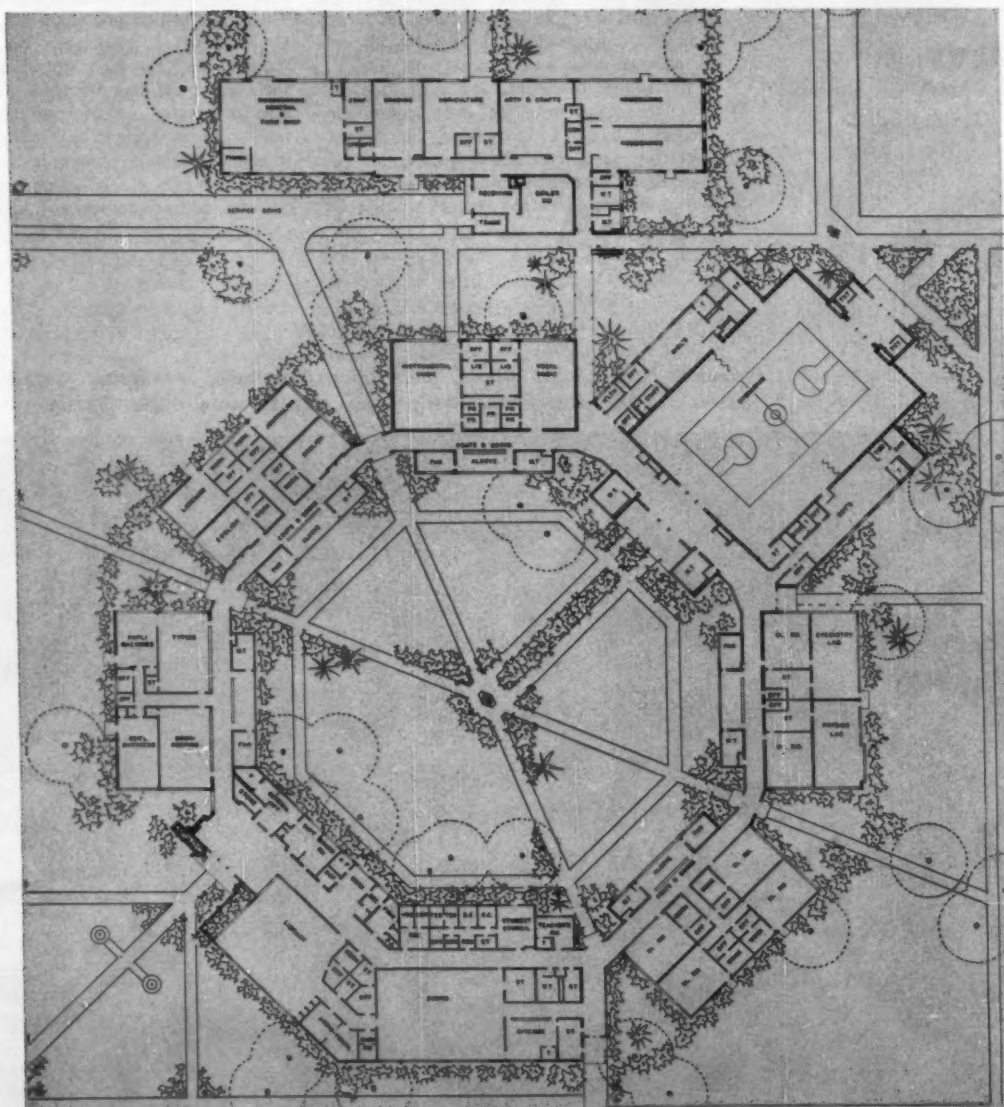
The typical classroom unit evolved from preliminary studies by the school staff, the Central Michigan College Teacher Training Division and the architects, Louis C. Kingscott & Associates, Inc., of Kalamazoo. Since the high school is a nucleus for teacher training for the college, which also is located at Mount Pleasant, the resulting arrangement is proving beneficial to the high school teachers in their training program while at the same time enriching the educational opportunities of the students.

An aerial view of the Mt. Pleasant, Mich., high school, illustrating the basic octagonal design of the plant. Louis C. Kingscott and Associates, Inc., Kalamazoo, Mich., were the architects.



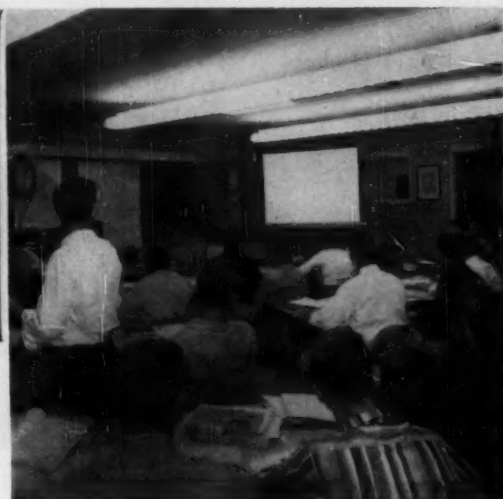


View of a typical classroom in the academic clusters, showing the office and work-room adjacent to each teaching station. In the classroom units, the walls are painted block with brick wainscots. Ceilings are acoustical tile, floors asphalt tile; lighting is fluorescent.





The biology room in the science "cluster" at Mt. Pleasant high school has laboratory tables arranged in a perimeter around a core of desks.



Above: the unit kitchen room, one of two in the homemaking department, is located in the separate "vocational education building." Right: special planning that went into the school involved the extensive use of audio-visual materials. Below: the typing room in the commercial education cluster, one of four areas.





The "general shop" of the plant specializes in woodworking and farm shop instruction. The vocational education building has facilities for drawing, agriculture, as well as for arts and crafts and homemaking. Above is shown the "general shop." Below is a view of the Mt. Pleasant gymnasium, which has a folding bleacher capacity for 1500 spectators. The playing floor is maple; the walls are block with a brick wainscot.



Four-Room Clusters

Each academic classroom has an adjoining workroom and office, arranged to become useful adjuncts to the larger room. This permits a master teacher in such a unit to supervise work that may be progressing in three areas: individual study or counseling in the office, small group projects in the workroom, and class activities in the large classroom. Vision panels in the walls of these units aid in this supervision.

The classroom units in turn are grouped in clusters of four on a departmentalized basis. The result has been the strengthening of departmental organization and a

greater opportunity for student teachers to gain experience.

In its initial year of operation the arrangement has been received enthusiastically by the school staff. The potentialities are being put to the use for which they were intended. Many classes in subjects which have a large load of student teachers are operating with two student teachers under the supervising teacher. The classroom arrangement permits departmental meetings and co-ordination within each department area.

The school was built to accommodate 800 students. Future expansion will be outward from each cluster, by department

as necessary, to an ultimate capacity of 1200 students.

The over-all result of the octagonal plan has been a compact arrangement in which a feeling of spaciousness is retained. The building occupies only 20 per cent of the 30-acre site, leaving the remaining area for development of physical education facilities and parking areas. Pursuant of the long-range planning, the gymnasium is placed to open onto the larger portion of the site.

Audio-Visual Facilities

Because of the accessibility of Central Michigan College's resources, the audio-visual program has been given considerable emphasis in the high school. Included in the building is an audio-visual library and workroom, as well as storage space for equipment. Each classroom has blackout curtains at the windows and closing louvers on the skylights.

The cafeteria, equipped with in-wall folding tables, is put to use during the school day as an assembly area and study hall, and after class hours for parties and banquets. Multiple use is also made of the gymnasium, which can be converted into an auditorium with a portable stage and curtains supported from the trusses. Special consideration of acoustics in this portion of the building has brought highly satisfactory results.

Lockers are eliminated from corridors to provide another space-saving and money-saving feature of the school. An alcove is located across the corridor from each classroom unit, containing free-standing clothes racks, above which are cubicles for books and personal belongings. Each cubicle is equipped with a lock on its wire mesh door.

Separation of the vocational wing from the octagonal building insures that noise of machinery will not disturb activities in the academic section of the main building. The school's power plant is also located in the vocational wing.

Construction Materials

The single-story building is of steel frame construction, with face brick exterior walls and painted lightweight block interior walls. The latter have face brick wainscots in the corridors and classrooms. Floors for the most part are asphalt tile, with terrazzo in toilets, shower and locker rooms, wood in the gymnasium, and concrete in the shop wing.

Heat is supplied by forced warm air, radiant floor panels, and unit ventilators.

Future plans include the development of the central court as an outdoor auxiliary instruction area.

The Costs

Construction contracts for this school totaled \$1,222,937 for an area of 91,900 square feet, resulting in a cost per square foot of \$13.31.

Congress Looks at the Curriculum

ELAINE EXTON

In view of the revival of interest in the goals of American education and what the nation's schools should teach stirred up by the orbiting of Soviet sputniks, it is perhaps not surprising that seldom, if ever, has the curriculum come in for so much mention before Congressional Committees as in the recent hearings before the Senate Committee on Labor and Public Welfare, chaired by Senator Lister Hill (D., Ala.) and the House Subcommittee on Special Education, chaired by Representative Carl Elliott (D., Ala.).

As Congressman Elliott remarked in reopening the hearings before his subcommittee last January: "In the press, over the airwaves, on street corners and in homes, among businessmen and professional men, including educators themselves, we now hear a constant clamor for the refinement of curriculum and for the improvement of teaching at all levels, from the grammar to the graduate school."

In studying the relationship of American education to national security in a scientific age, the members of the education committees of the Congress took both a backward and a forward look besides inquiring into the educational problems of today—backward to the experiences of their own school days whose virtues assumed a rosier hue in retrospect and forward to the skills that will be needed by the American people 10 and 20 years from now if the United States is to forge ahead in the race for technological supremacy and meet the challenge presented by the Russian system. This challenge is, as Werner Von Braun, the "father" of the United States Explorer Satellite, and others warned, a total challenge "involving every aspect of our way of life: religion, economics, industry, science, technology, and education."

Required Subjects in Days Past

Typical of the comments of those who looked back nostalgically to the days of their youth is this statement of House Education Chairman Graham A. Barden (D., N. C.), relating: "The school I went

to wasn't anything akin to a first-class high school, but when I left there I had finished solid geometry. Now they won't know what you are talking about in the average high school if you said solid geometry, and I had read Latin right on through Caesar, Virgil, Cicero, and all the rest of them. Now they don't take that. They learn how to serve a meal or properly hold their shoulders when they are dancing, and so forth."

"Has the educational system fallen down?" questioned Representative Donald Nicholson (R., Mass.), recalling: "When I graduated from high school over 50 years ago these things were required—history, and English, and physics, and chemistry, and mathematics . . . and it was required to take Latin or French, either one of the two."

"Now," he protested, "they go up and take up—I do not know—anything, bookkeeping. They certainly do not take reading. And I am sure they do not take up writing any more in school because if you were a Congressman and get the letters that I get from the young people, you would not feel too good about it."

"So I think that the place we should begin to take care of these things," he suggested, "is at home, and have your department (Health, Education, and Welfare) or the State (Education) Department go out to the women's clubs and everything else and show those people the advantage of taking these required subjects. It is an educational job in itself and should be carried out that way."

Representative Phil M. Landrum (D., Ga.) wondered whether "the most critical problem in the field of education today . . . is the softness of the curricula (and what could be done) to get these schools to again require the hard courses as the fundamentals of our educational program."

Lifting Intellectual Standards

Regretting that "schools are drifting away from the old style basic curriculum," Senator H. Alexander Smith (R., N. J.) voiced doubt that the wide choice of

courses now being offered students "before they are mature enough and before they have mastered their really important basic educational subjects" is a tendency in the right direction.

Among those who urged that more emphasis be placed on the intellectual training of our young people was Senator Gordon Allott (R., Colo.) who inquired: "Is there not a great opportunity to start at the lowest educational level in the first grade and tighten up our educational processes from there right on through high school?"

"I am thinking," he explained, "in terms of the facts that if our educational systems are to be actually changed, and I personally believe that they are long due for some more emphasis on serious study, then the men and women who are the controllers, the school boards, and the men and women in the communities all over this country must be made completely aware" (of the importance of improving the intellectual level of attainment in our high schools in order to assure the intellectual pre-eminence of the United States).

Broad Education Advocated

The bulk of the testimony concerning the subjects schools should teach favored a balanced curriculum that would provide a good, sound, basic education.

Even Marion B. Folsom, the Secretary of Health, Education, and Welfare, and other witnesses who supported the need for a short-term program of federal aid to strengthen the teaching of math and science did so on the grounds that this is in the national interest and necessary, as Secretary Folsom phrased it, to correct "the imbalance developed in recent years (because) we are not giving proportionately as much math and science in schools as we used to give." They further agreed that in restoring the balance we formerly had, and again we quote Secretary Folsom, "we don't in any way want to detract from the other basic courses in humanities,

(Concluded on page 36)

THE AMERICAN School Board Journal

An Independent Periodical of School Administration
William C. Bruce, Editor

A PRACTICAL SUGGESTION

THE recent ferment in education is not completely unfortunate. Even the charge that school boards stand in the way of rapid improvement in the quality of the schools and the stiffening of instructional services has some values. Addresses and discussions, as well as resolutions adopted by the Miami convention of the National School Boards Association, indicate that the boards of education are addressing themselves to the aspects of solving the problems of curricular reconstruction, as just one phase of tackling the entire job of improving American educational efficiency.

It is notable that in the general criticisms of the schools, the popular magazines have offered very few practical suggestions which school boards might use to improve the schools in their local situations. In this connection, a recommendation of Dr. C. D. Hardesty, superintendent of the San Diego County, Calif., schools, is worth consideration.

Dr. Hardesty recalls that recent emphasis on the education of gifted children, as well as the recent criticisms of the schools, raises the question of what, and how much, should be expected of pupils in the schools. If the old principle of individual differences is applied to the present situation, the schools should expect "from each pupil performance in accordance with his ability, interests, and personality. What the child is shapes up expectancies for him."

There is ample evidence that more can be expected of boys and girls in the high schools. The emphasis on the part of school boards and their professional executives can do much to stiffen the courses and to induce boys and girls to avoid the easy, makeshift subjects. Dr. Hardesty recalls that no less a group than the National Association of Secondary School Principals has proposed that the traditional four-year high school program could be completed in three years, and this would enable boys and girls to do much in their fourth year that now is put off to the first year of college. It might be added that each teacher should reasonably consider it a responsibility to insist that every student achieve to the best of his ability.

In the grade schools similar improvement might be undertaken. There is ample evidence in the recent literature that the present standards, particularly in the tool subjects, can be raised. Dr. Hardesty recalls that a well-known research worker in the field of school achievement is convinced that in all schools the norms could be raised by as much as one-half year in all subjects, and at all grade levels.

The task of putting into effect a program of stiffening the school offerings is not simple, and cannot be undertaken in one year's time. It requires the devoted work of administrators and teachers, supplemented by the school boards, and supported by the parents, and the entire community.

FEDERAL SCHOOL BUILDING AID

THE present feeling concerning federal taxes and the emphasis placed by teachers' organizations on the need for massive federal school support, particularly for salaries and

for improving the teaching of science and mathematics, makes it extremely doubtful whether legislation will be passed in this session of the Congress to provide aid for needed school building construction.

The local board of education confronted with a serious need for replacing obsolete school plants, or for providing additional facilities, particularly on the high school level, will be wise to go it alone and make every possible effort for local votes of necessary bond issues and direct tax levies. The school plant emergencies which were discussed so violently in 1955 and 1956 have been largely forgotten because other political opportunities would better help Democrats or Republicans.

The only bright hope in the present situation is the strong position which municipal bonds have been developing in the past six months. School boards will not only be wise to take advantage of the present more favorable condition in public financing; they should by all means point out to their constituents that public school construction is one of the most effective ways of overcoming recession conditions. More than \$8 billions of school buildings are needed to properly meet the classroom space needs which are developing between 1958 and 1961.

The base for the sale of school bonds can be broadened if legislation is passed that will enable the so-called "investment funds" to pass through to their shareholders without deductions the tax-exempt interest received on municipal bond holdings. School boards should definitely help in the promotion of such legislation as a means of making easier the financing of needed school buildings.

THE NEW ATTITUDE

IN ANNOUNCING its budget for 1958-59, the school committee of Haverhill, Mass., has made public a letter from Supt. Charles Whitcomb, who prepared the budget and who designated it as "*frugal—but not bargain basement.*"

Considering the present economic situation, the attitudes represented by Dr. Whitcomb are worth considering in any school budget requests presented for public approval. Says Dr. Whitcomb:

"The public should be informed that every effort has been made to make the impact on the tax rate as light as possible. It should, in addition, be clear to every citizen that budgets must inevitably continue to rise as long as the following factors exist: (1) The continuing trend toward higher costs of everything the system must purchase, from paper and books to teacher services. (2) The constantly increasing pupil load the school system is required to absorb. (3) The accelerated effort to lift deficient school building conditions to adequate levels. (4) The severe competition of our neighbors, particularly those outside our immediate valley, who shop in the same markets. (5) The constant demand for new services by the public as vacuums appear in a changing world."

Good schools are founded upon the premise that, under God, the human personality is all-important. This concept goes far deeper, of course, than our schools or our philosophy of education. Stemming from our earliest beginning, flowing from our Judeo-Christian heritage, it permeates our religious, social, and political culture. It finds expression in our laws and institutions. It colors much of what we do and determines moreover in large measure what we believe we ought to do. — JOHN H. FISCHER, Baltimore.

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BETTER RUBBER FROM START TO FINISH

WORD FROM WASHINGTON

(Concluded from page 33)

which we think are just as important as science and math."

As Senator Allott noted, in the testimony by a great number of extremely prominent scientists before the Senate Labor and Public Welfare Committee "there is not one who has failed to stress the fact that if we embark upon any kind of an educational program emphasizing just mathematics and science we will have lost sight of the ball we are trying to carry."

Alan Waterman, the director of the National Science Foundation, for instance, said that in his opinion "all thoughtful people and especially scientists will agree that science is not everything in our education by any means. They would like to see any steps taken in the direction of stimulation of science to include stimulation of other subjects of study because we need citizens with aptitudes of all kinds of studies that we have encouraged in the past. Indeed, our strength is undoubtedly due to that fact."

That "all our youth should receive a broad basic education" was emphasized by M. H. Trytten, director of the Office of Scientific Personnel of the National Academy of Science, who held "our scientists should be broadly educated, not narrow high-grade mechanics."

Many Congressmen, too, spoke in defense of a broad-gauged, broad-based educational system stressing that we need trained people in practically every area of knowledge.

Representative Henry A. Dixon (R., Utah) expressed appreciation for the impact of a broad mind on scientific developments "rather than the impact of a narrow specialist whose education has been splintered through overspecialization."

Declared Representative Coya Knutson (D., Minn.): "If the limited approach of aid only to students of the sciences is adopted, we face the future as a nation of dwindling national prestige. Every great civilization has needed not only scientists but capable people in all phases of life—farmers, philosophers, historians, businessmen, teachers, musicians, and statesmen. Broad education gives us understanding of ourselves, our world, and our place and strength in the world."

Taking another tack, Senator Wayne Morse (D., Ore.) observed: "The Communist system will seek by any avenue it can find to overthrow our own. Therefore, we must develop our intellectual resources in all fields of endeavor—in the humanities, the arts, and the social sciences, as well as in the physical sciences and mathematics."

Growing Need for Scientists

Calling action to meet the Russian scientific challenge a matter of "national survival," Wernher Von Braun, one of the nation's foremost missile experts, stated "the real peril lies in enormous momentum they have built up in a dynamic program to attain supremacy in science and technology."

Asserting that their state-controlled educational system is turning out competent engineers and scientists in greater numbers than ours, he termed it "vital to the national interest that we increase the output of scientific and technical personnel so that the input of trained manpower in the Government, industry, research institutions, college and public school classrooms, and the armed forces will be of sufficient quality and quantity to meet the requirements of the technological revolution which we are currently experiencing."

One of the important reasons why the Russians are pulling ahead of us in science, according to physicist Edward Teller who helped to develop the hydrogen bomb, "is the fact that they drive their children on toward a very solid education, particularly a thorough education in science."

"Starting from the very lowest grade, children are being separated into the more talented and industrious and those who are the run-of-the-mill," he reported, adding "and the children who do better are encouraged to go on. They are being graded all the way up and the winners in this fierce competition finally become the scientists in Russia." Mentioning that "to produce scientists is a long drawn-out process," he acknowledged the Russian "children who will become the active scientists ten years from now are today better educated," saying "therefore the tide is clearly and definitely running against us."

Among the contrasts cited in the discussion of fundamental differences between the purpose of the Russian education system and our own was the fact that in America resources are directed toward individual well-being, rather than national power.

Our education system is aimed at the development of the individual not the service of the state as is the case in Russia where, as Wernher Von Braun who directs the development operations of our Army's Ballistic Missile Agency, pointed out the "education system is a system which produces scientists and engineers that the state needs, disregarding very much the personal inclination of the individual" in their disciplined approach.

"In Soviet Russia they sift (children) out repeatedly in their endeavor to get the highest to the top (and) consistently give the top performers the best opportunities," he stated, warning that in America "since the objective was to give as many people as possible a high school and college education standards had to be lowered."

On the other hand, Representative Jack Brooks (D., Texas) maintained that "freedom to inquire and to think and to create is a superior climate for education than the climate of unnecessary regimentation."

Improving American Education

To win the intellectual contest with the Soviet Union, Frederick L. Hovde, President of Purdue University, counseled that our "goal should be to do everything possible to improve the quality aspects of our American (education) system so that none of our human talent is wasted."

Affirming "that the essence of democracy in this country is to give every individual

an opportunity to attain his God-given potential," Morris Meister, principal of the Bronx High School of Science in New York City, held "you cannot do so if you place our able children in a heterogeneous group where excellence and intelligence are dragged down toward mediocrity."

L. A. DuBridge, president of the California Institute of Technology, was another educator who advised that "we look at our (education) system and ask under the democratic system are we doing the best it is possible to do, to find the best brains in our population and to give these brains the best possible development and make the best possible use of them?"

Representative Thomas B. Curtis (R., Mo.) argued that "objective and intelligent self-criticism is a stronger and more permanent incentive . . . as a stimulus to improve our educational system . . . than resorting to the fear of Russia."

Congresswoman Edith Green (D., Ore.) perceived a possible danger in placing too much emphasis on what the Russians have done in education, contending "I think this is not the basis for wise planning, but rather what, in the long run, will be best for the American way of life."

As the debate proceeded on how best to strengthen American education for its responsibilities in the newly dawned space age a common thread running through the remarks of legislators and educators alike was that whatever steps are taken should be carried out in the framework of our democratic beliefs and without endangering any of our freedoms.

Preserving Local Control

Most of the presentations recognized that questions involving what should be taught and how it should be taught are matters that should continue to be determined by local school districts. It was the consensus that whatever federal aid measures the Congressional education committees might propose to deal with critical points of need in the nation's education program should not violate the American tradition of decentralization of education which leaves the control and administration of our schools in the states and the localities where they have been from the beginning.

Several of the Congressional members, Representatives George McGovern (D., S. Dak.) and Stewart Udall (D., Ariz.) among them, inquired whether adopting a federal program geared to stimulating such special fields as science, mathematics, and foreign languages might provide an opening wedge that could enable the Federal Government to put pressure on the administration of school programs.

Cautioning that the proposals drafted by the Elliott Subcommittee should "not try to establish better curriculums," Representative Peter Frelinghuysen, Jr. (R., N. J.) reminded "that is a field in which the Federal Government traditionally has said the basic responsibility is local."

"We know that our educational system is built on administration and control in the states, in local communities, and in private institutions of learning," said Senator Lister Hill, declaring, "I firmly believe it should be that way."



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Surveying the School Scene



SCHOOL DISTRICTS

There were 51,881 school districts in the United States during the school year 1956-57, according to statistics released by the U. S. Department of Commerce. During the same year there were also 2521 other public school systems in the country, operated under special local situations.

The latest figures represent a reduction in school districts of 6465 districts since the school year 1951-52. The largest drops in the number of districts have taken place in the midwestern states of Illinois, Michigan, Minnesota, Missouri, Nebraska, and Wisconsin, and in New York. Appreciable reductions in districts have also taken place in Colorado (29 per cent), Idaho (43 per cent), Oregon (29 per cent), Texas (27 per cent), and Kansas (20 per cent).

SEGREGATION IN VIRGINIA

The state of Virginia has lost a last-ditch effort to prevent seven Negro students from entering white schools in Arlington county.

The U. S. Supreme Court refused to consider an appeal, which opened the way for enforcement of an order by U. S. District Judge Albert V. Bryan, of Alexandria, that the Negroes be admitted to four schools, and brings closer a threat that the schools may be closed under Virginia's antisegregation laws.

Those laws say a school must close if integration occurs. If the schools reopen on an integrated basis, state funds are to be shut off.

GORES ELECTED

Harold B. Gores, formerly superintendent of schools at Newton, Mass., has been elected the first president of Educational Facilities Laboratories, Inc., 477 Madison Ave., New York City. He will assume his new duties September 1, 1958.

Dr. Gores, a New Englander, was educated at Bridgewater State Teachers College, and at Harvard University, where he received his doctorate. He served as superintendent at Newton for the past nine years. In recent years he has been president of the Harvard Teachers' Association and chairman of the Fullbright Teacher Exchange Program for the northeast region.

OVERCROWDED CLASSES

The NEA recently estimated that 300,000 children of urban districts are attending school for less than the usual five-hour day. In the 1955-56 school year there were 250,000 such children. The report was based on a survey of 6.5 million elementary school children—about 55 per cent of those enrolled in districts of 2500 or more population.

Moreover, the NEA claimed that the problem of crowded classes is becoming more acute, as now more than half of the nation's elementary school children are attending classes of 30 or more. "More than 31,000 new classrooms and teachers would be required right now just to level off the larger classes to a maximum of 30," the report reported. Also:

(1) More than 146,000 urban children are in elementary school classes of more than 45 students each, (2) about 540,000 are in classes of more than 40, (3) about 2.5 million are in classes of more than 35, (4) fewer than 15 per cent are in classes of 25 or less.

BIRTH DROP RECORDED

According to the Population Reference Bureau, Inc., the current economic "recession" has decreased the birth rate by 7000 during the first quarter of 1958 as contrasted with the first quarter of last year. The bureau stated that the decline, which began in November of 1957, is increasing each month from the same month a year ago: January, 1958, 1000; February, 2000; March, 4000. While the decline was still classified as too small to establish a definite trend, the bureau stated that the decline may indicate the postwar baby boom is over and that the nation is entering a new population phase.

CERTIFICATION OF TEACHERS

Commissioner James E. Allen, Jr., of New York State Education Department, has recommended a modification of the new certification standards for secondary teachers of academic subjects.

Dr. Allen suggests holding in abeyance that part of the regulations for permanent certification which calls for an increase in the present requirement of professional education courses from 18 to 24 semester hours.

Dr. Allen proposed that after the student has completed a minimum of 18 hours' professional education courses, he be free to elect either six additional hours in this area or 6 hours in advanced study in the field in which he will teach. The recommendations have been approved by the Board of Regents.

PARKER APPOINTED



Clyde Parker has been elected assistant superintendent for personnel and public relations by the Oak Park, Ill., elementary school board of education. Vice-president of the AASA during 1956, Dr. Parker was superintendent of schools in Cedar Rapids, Iowa, from 1946.

ANOTHER FEDERAL AID BILL

The Council of Chief State School Officers is promoting the passing of House Bill 12279 for federal aid to education, which has received almost unanimous approval of the heads of state school systems. The Council is now soliciting support from local educational leaders.

The Bill would provide an annual appropriation of \$500,000,000, to be used for teachers' salaries, school facilities, and equipment. The funds would be distributed to the

Are Schools Costly Palaces?

In an address before the New York State Association of School Business Officials, Dr. Henry H. Linn, professor of education at Teachers College, Columbia University, cited seven solutions to the problem of economy in school plant planning and construction (economy that results in lower cost with no loss of basic service):

1. The school officials responsible for outlining the educational specifications for the proposed plant must study the local community, determine the educational program needs, and approach the building planning process with an appropriate attitude of economy. They can scarcely talk economy and at the same time think of grandiose or monumental structures.

2. The board of education should select an architect who has demonstrated ability, competence, vision, and a desire to consider and practice sound economy. Check performance, rather than promises.

3. During the planning process, check and recheck the basic space needs for the various building areas to avoid either overbuilding or underbuilding. Some members of the educational staff occasionally are overzealous and unrealistic in suggesting space needs for their particular areas of interest.

4. The time element is extremely important. Select sites far in advance of needs, if possible, when open land is available and reasonably cheap. Give the educators adequate time to study their program and building requirements so that the building may be planned to fit the program, rather than to force the program to fit the plant. Give the architect adequate time to prepare his sketches, plans, and specifications so that they are complete and detailed when contractors pick them up to prepare their bids. Give the contractors adequate time to prepare their bids so they can do close figuring of costs. Allot the successful contractors adequate time to erect the structure and, furthermore, order the equipment early enough so that the suppliers will have adequate time to construct, deliver, and install their materials.

5. Use building materials and types of construction that result in lower original costs, without disproportionate higher costs for subsequent operating and maintenance of plant.

6. Use stock items of building component parts or equipment rather than special custom built items, when feasible, without serious loss of service.

7. Review with special care the plans and specifications for the several mechanical trades to avoid questionable or unnecessary mechanical gadgets or service.

states, on the basis of school-age population, through the state departments, for use by public elementary and secondary schools. The Federal Government would have no control of the funds, except for determining the relations of the state's school-age population to the total school-age population of all the states.

Under the Bill, the term "school facilities" is intended to embrace classrooms and related facilities, including initial equipment, machinery, and facilities necessary for school purposes. The term "equipment" is intended to include such articles as furniture, furnishings, machinery, laboratory apparatus, and school library books—all items which are not an integral part of the building service. The term "school-age population" is to include all children between the ages of 5 and 17, inclusive.

The proponents of the Bill believe that it deserves special attention because of its extreme simplicity and the safeguards it provides for state control of public schools without federal interference.

HANSEN ELECTED

Dr. Carl F. Hansen, temporary superintendent of schools in Washington, D. C., since March 3, was named to this office on a permanent basis on May 21. He succeeds the retired Hobart M. Corning.

COURT RULES ON INFORMANTS

The Appellate Division of the New York State Supreme Court has upheld the State Education Commissioner's policy against requiring teachers to inform on colleagues they had known as Communists.

The Court ruled unanimously against the New York City board of education, which had contended that it should be permitted to discharge teachers who refused to identify others they knew as Communists.

The case involved one principal, three teachers, and a teacher-clerk, all admitted former Communists.

BEACH APPOINTED

The U. S. Office of Education recently announced the appointment of Fred F. Beach as director of the school administration branch, succeeding E. Glenn Featherston who is now assistant commissioner for state and local school systems. Dr. Beach has been with the Office of Education since 1945.

ALEXANDER TO ADDRESS ASBO

Dr. William H. Alexander, pastor of the First Christian Church of Oklahoma City, will deliver the convention address during the first general session Monday morning, October 6, 1958, at the 44th Annual Convention and Exhibit of the Association of School Business Officials of the United States and Canada, to be held in the Grand Ballroom of the Hotel Statler, New York City. He is one of the Southwest's best known ministers and a lecturer for General Motors.

GIFTED CHILD WORKSHOP

The University of Chicago announces its second Workshop on Education of the Gifted Child, to be held July 7-July 25, on the campus. Professors Philip W. Jackson of the University of Chicago and Robert DeHaan of Hope College, Holland, Mich., are codirectors of the workshop, which is offered to teachers, supervisors, and administrators who are actively engaged in programs for the gifted or are planning the introduction of such programs. Additional information may be obtained by writing to Professor Philip W. Jackson, Department of Education, University of Chicago, Chicago 37, Ill.

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Giving complete satisfaction, Durham chairs do double duty in this "Cafetorium." From Madeira Beach Elementary School, St. Petersburg, Principal Robert L. Moore writes: "We like DURHAM folding chairs . . . they are easily, quickly placed in position or stored in limited space. Our custodian finds them easy to handle . . . they do not mar the floor tile in any way. They get more than average use. But, today, they still look like new . . . very comfortable, too."



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News of Products for the Schools

ANNOUNCES NEW THINLITE GLASS CURTAIN WALL

A revolutionary new curtain wall system that provides controlled daylight, as well as all the structural members and units needed to enclose a building, has been announced by Owens-Illinois of Toledo, Ohio.

The "Thinlite" curtain wall system is a "complete enclosure element with both exterior and interior finish, insulation, structural independence, and a means of attachment to the building," according to E. P. Lockhart, vice-president of the firm's Industrial Materials division. "It provides for controlled daylight and allows the architect complete freedom to express his own individuality of design. When its elements are put in place, the wall is completely finished, both inside and out."

Drawing upon 20 years of research in the field of prismatic glass block, Owens-Illinois developed a thin, lightweight, daylight-controlling glass unit for use in a prefabricated curtain wall system. This glass unit, now a basic part of the Thinlite system, is hollow, two inches thin, and 12 inches square. Lightweight, it incorporates the same successful solar-selecting principles as other daylight control products.

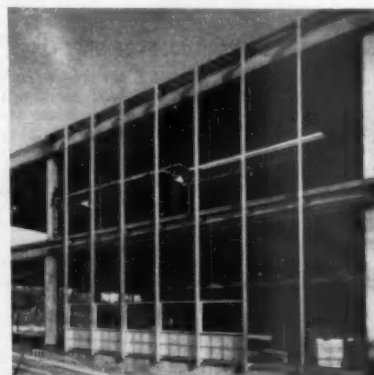
Thinlite glass units are assembled in panels at the factory with the aid of a new, quick-setting cement. Designed for either a four-foot or a five-foot horizontal module, the standard panels are two feet high and either four or five feet wide. They have perimeters of extruded aluminum which interlock for easy and quick installation. The workman needs only one tool, a screw driver, to install the panels.

Currently, the basic daylight panels are available in three colors: a white for daylight use, a blue-green for severe sunlight exposures, and a yellow for nonsun exposures.

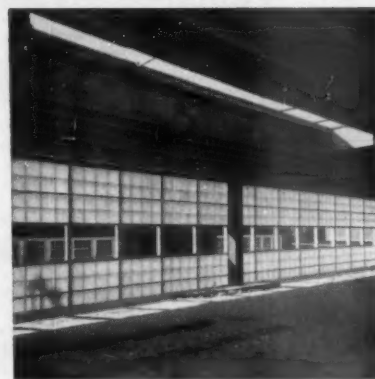
Moreover, to offer the architect a means of design expression, the basic panels are supplemented with colorful Thinlite ceramic-face glass panels, vision panels, decorative glass unit panels, and porcelain and other special type panels. The window panels, either fixed or projected, carry the same perimeter and are interchangeable with any other panel.

Panels are erected in vertical stacks and are bolted to vertical extruded structural struts, spaced four or five feet on centers. Included with the panels is a complete line of aluminum parts, such as sill, jamb, head members, and connectors. The struts, which can be installed either on the inside or the outside of the wall, are isolated from the wall itself by sponge Neoprene gaskets—eliminating problems usually present in curtain wall systems. The gasketing system on the panels is so

(Continued on next page)



Farmington, Mich., Junior High School, designed by Smith, Tarapata and MacMahon, uses 5000 sq. ft. of Thinlite curtain wall. The interlocking, 2 by 4 ft. panels are only 2 in. wide. Weighing only 90 pounds, panels are easily handled by two men and installed with a screw driver. Quick assembly of exterior walls is ideal for winter construction. The view of unfinished interior (right) shows how the wall controls light. The glass unit with its 1-inch air space has an insulating value equal to double glazing.



complete that the only calking job necessary is around the perimeter of the entire opening.

School boards, administrators, and architects will be pleased by the speed of erection made possible by the Thinline system. Since the members are predrilled, layout work on the job is held to a minimum. The two-by-four feet panels weigh approximately 90 pounds, permitting just two workers to handle the units easily.

(For Further Details Circle Index Code 090)

PLAN-N-PRINT KIT

Here is a new planning device, a kit that makes floor plans and layouts of rooms, offices, kitchens, etc., for use in any school, hospital, or institution. The kit contains magnetic templates of furniture and equipment, scaled to size; sensitized graph paper; and a carrying-



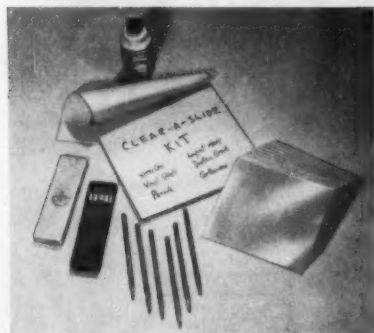
Duplicates Floorplans

case printing unit. The templates are arranged on the paper. Then the entire layout is exposed to electric lamps in the case; within a few minutes duplicate copies of the floor plans and arrangements can be had for planning and redesigning sessions. For more information send for brochure from Templan, Inc., Indianapolis 18, Ind.

(For Further Details Circle Index Code 091)

HOMEMADE SLIDES

A new idea for visual instruction has been introduced by the Charles Beseler Co., East Orange, N. J. Slides can now be made while lecturing and used immediately. The provided



Slides Made In Classroom

vinyl sheets are cut to the desired size, colored or written upon, and sprayed. In only a moment's time, the spray is dry, and the slide is made permanent and ready for projection. The kit, called the Clear-A-Slide Kit, includes the spray can, layout pads with grid lines,

12 pencils in assorted colors, eraser, lint brush, 25 vinyl sheets, and the container. The fully equipped kit is available in four sizes from 3½ by 4 in. to 10 by 10 in.

(For Further Details Circle Index Code 092)

COOLER UNIT FOR FOUNTAINS

An extremely compact refrigeration unit has been developed by the Halsey W. Taylor Co., Warren, Ohio, manufacturers of drinking fountains and coolers. Where space-saving is a factor, the unit can be placed in a wall recess, under counters, on shelves or in a cupboard, and connected to any of the firm's drinking fountains at a remote location. Unit comes in three sizes. Send for descriptive literature.

(For Further Details Circle Index Code 093)

AUTOMATIC HEAT REGULATOR

A new low-cost regulator, called the Illinois Night Control, checks off-hour temperatures in buildings that use motor-driven fan heaters. It can be used with heating and air-conditioning systems. The unit is a compact pre-wired package that eliminates on-the-job wiring. The control will shut off fan motors either singly or in groups; the heating unit will then continue its tempering effect. When the temperature drops below the desired level, the control restarts the fan and allows it to operate until the proper temperature is again reached. Included in the cabinet is an automatic time clock which can be dialed to a one or seven day program, a low-limit thermostat, magnetic contractor, and a manual selector switch. For more information, write to the manufacturer, Illinois Engineering Co., Chicago 8, Ill.

(For Further Details Circle Index Code 094)

SCAFFOLD ON WHEELS

This Up-Right aluminum scaffold-on-wheels, manufactured by Up-Right Scaffolds, Berkeley 10, Calif., permitted three men to refinish



Speedy Painting

2000 square feet of auditorium space in only four hours. Painting around basketball backboard braces was faster as the tower was rolled around obstructions and the men could work at their most convenient platform heights. The 20-foot scaffold is stored in folded sections and can be quickly assembled.

(For Further Details Circle Index Code 095)

(Concluded on page 42)

CORRESPONDING CODE INDEX NUMBERS TO BE ENCIRCLED CAN BE FOUND ON THE CARDS IN THE READER'S SERVICE SECTION

ONE MOWER... for all mowing jobs!

It's
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No danger of flying sticks, stones or other debris. Ideal for mowing areas where children are present—such as parks, parkways, playgrounds . . . and even vacant lots. It costs no more to buy the best! The unique MOTT "Hammer Knife" mower, rugged and simple in design, gives years of useful, trouble-free service. This means economy for you! First cost economy . . . maintenance economy . . . and operating economy!

MOTT mowers are available in 18" and 24" (walk-behind); 4, 5 and 6 ft. (tractor mounted) and self-powered gangs to 19 ft.



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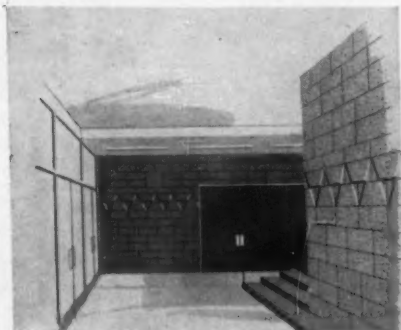
mott
HAMMER KNIFE
MOWERS

News of Products . . .

(Concluded from page 41)

CONCRETE BLOCK PATTERNS

A new concept in exposed masonry construction is Shadowal block developed by the National Concrete Masonry Association. The pattern of the block is built into its surface. When laid together in a wall, the blocks can form a number of attractive designs, giving a dramatic three-dimensional effect. A $\frac{3}{4}$ -in. angled recess is cut into the face of a



Add Texture to Walls

modular 8 by 8 by 16-in. block. As the light falls on the indented area, it casts an interesting shadow that adds texture to the wall surface. In addition to the hexagonal and triangular patterns pictured, the blocks can be combined to form a diamond or waffle weave; diamond-octagon; wheatstacks or inverted diamond pattern; hexagram or Star of David

designs. Available from NCMA members throughout the country, the Shadowal block offers decorative walls at little extra cost. The blocks are durable, firesafe, sound absorbent, and require little maintenance. If desired, they can be coated with transparent waterproofing or painted in a variety of colors.

(For Further Details Circle Index Code 096)

NONSLIP FLOOR WAX

Poly-Kote is a new slip-resistant floor wax which has a higher frictional coefficient when the floor is wet than when it is dry, according to the manufacturer. The new wax resists water spotting, can be maintained by buffing, and can be patched and blended without unsightly build-up. For more details, write to the manufacturer, Hillyard Chemical Co., St. Joseph, Mo.

(For Further Details Circle Index Code 097)

NEW VARNISH ON GYM SEATS

A new and tougher wood finish designed for use on gym seats has been announced by Fred Medart Products, Inc., St. Louis 18, Mo. The finish consists of two mechanically applied coats of alkyd melamine varnish. The prime coat is warm air-dried in specially built ovens, and after sanding, a second coat of varnish is applied. When dry, the wood is completely free of bubbles and other blemishes. According to Medart, the new lacquer will not chip or check; resists abuse from walking and jumping; will not accumulate dirt and dust; and upkeep is easy and inexpensive. For more information write for the manufacturer's catalog on Medart Telescopic Gym Seats.

(For Further Details Circle Index Code 098)

CATALOGS AND BOOKLETS

Care and use of boiler tubes is explained and diagramed in a booklet issued recently by the Boiler Tube Company of America, McKees, Pa. Write for a free copy of "Boiler Tubes."

(For Further Details Circle Index Code 099)

A new bulletin describes the 400-series of high-speed electric dumb-waiters made by Energy Elevator Co. Philadelphia. The four-page folder includes complete specifications for architects and planners of schools and universities, and other many-storied buildings.

(For Further Details Circle Index Code 0100)

Clarín Mfg. Co., Chicago 44, is offering a free folder on "How to Provide Lower Cost School Seating." The folder describes the adaptability and easy handling of folding chairs in school multipurpose areas.

(For Further Details Circle Index Code 0101)

"Safety Code for Inspection, Maintenance and Protection of Fixed Foam Systems" is available without cost from Fire Equipment Manufacturers Association, Pittsburgh 22, Pa. The six-page brochure outlines the care of chemical, indoor and outdoor foam systems.

(For Further Details Circle Index Code 0102)

"A Question of Value and Your Community Dollars," is a colorful bulletin published by the American Institute of Timber Construction, Washington, D. C. The 16-page brochure is a nontechnical presentation of new scientific uses of wood as an engineering material in the construction of modern schools.

(For Further Details Circle Index Code 0103)

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Newest on the classroom scene!



QUADRALINE
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70	American Desk Mfg. Company 42	79	Mississippi Glass Co. 4th cover
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71	Arlington Seating Co.. 40	710	Mott Company, C. W... 41
	School furniture.		Hammer knife mowers.
72	Claridge Products & Equipment, Inc. 7	711	Nesbitt, Inc., John J. 3 & 4
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73	Delta — Rockwell Power Tool Division 6	712	Premier Engraving Co.. 42
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74	Durham Mfg. Corp. 39	713	Safway Steel Products, Inc. 3rd cover
	Folding Chairs.		Telescoping gym seats.
75	Firestone Tire and Rubber Co. 35	714	Sloan Valve Co. 1
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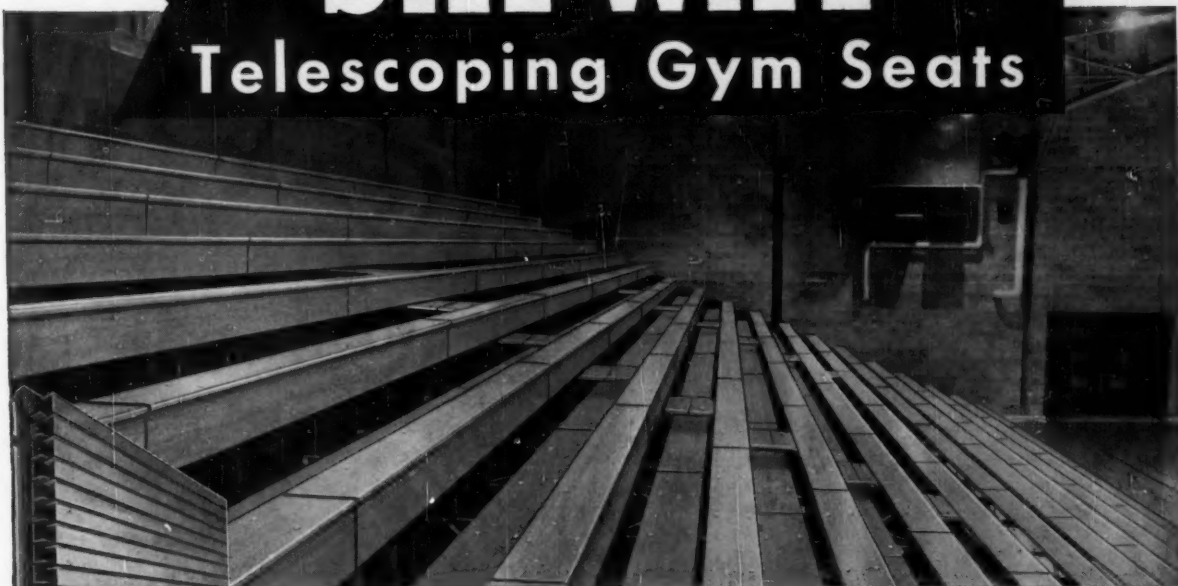
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(Continued)

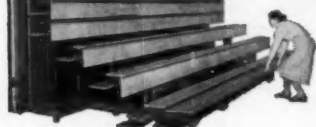
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SAFWAY

Telescoping Gym Seats



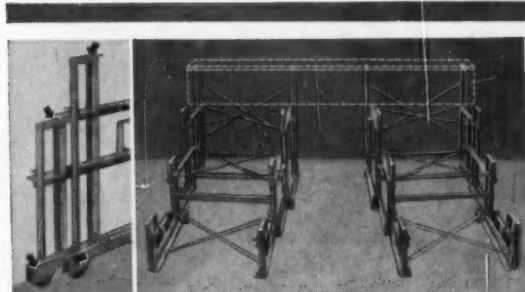
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duce effort. Complete 16-ft. sections move straight in and out, without binding or cocking. The simple telescoping design eliminates jointed levers and crossarms.

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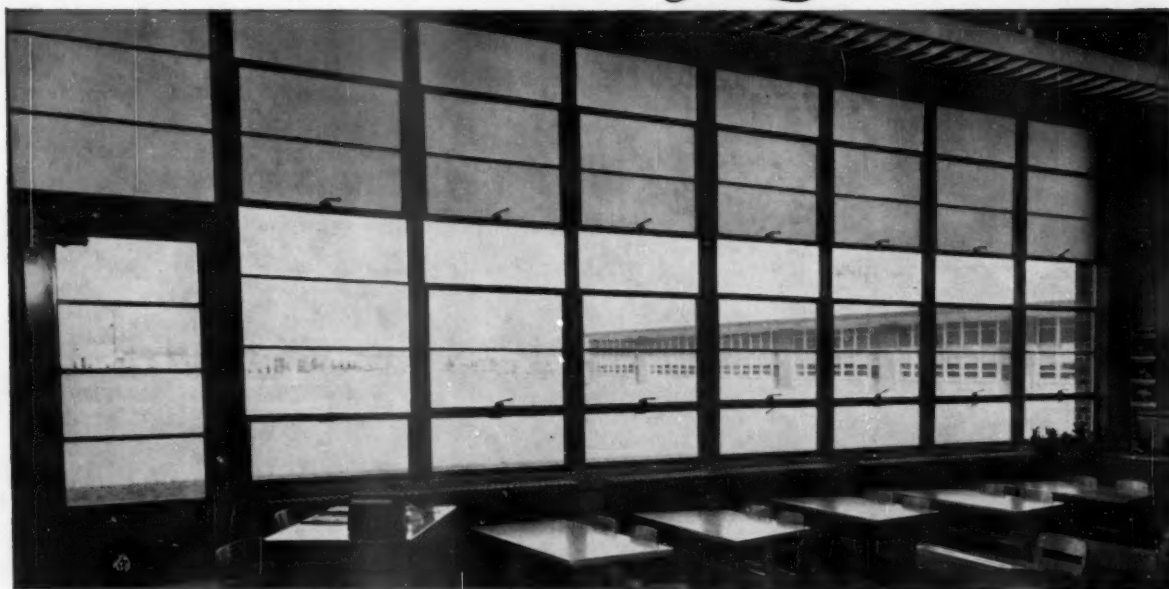
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